Shaping ONTARIO'S Physician Workforce

Building Ontario's Capacity to Plan, Educate, Recruit and Retain Physicians to Meet Health Needs

REPORT OF THE EXPERT PANEL ON HEALTH PROFESSIONAL HUMAN RESOURCES

JANUARY 2001

DEAR MINISTER:

We are pleased to provide you with the final report and recommendations of the Expert Panel on Health Professional Human Resources: ***"Shaping Ontario's Physician Workforce"***.

Building on the work undertaken in 1999 by Dr. Robert McKendry, the Physician Fact Finder, the Expert Panel was asked to develop medium and long-term strategies to ensure Ontario has sufficient physician resources to meet future health needs. Over the past year we have spent considerable time reviewing and analyzing the evidence, and debating the options.

While we reviewed a wealth of relevant material, including some 30 submissions made to the Panel, the focal point for our work was the Report of the Physician Fact Finder. We used Dr. Mckendry's recommendations as the basis for some of our analysis and as a reference guide as we developed our strategy.

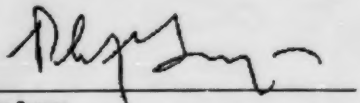
Early in our mandate, the Panel identified the need for better data for physician resources planning and a needs-based model for forecasting requirements to inform our recommendations. As a result, the Panel has developed a new, robust master physician database and has used this database to develop an access modelling approach to determine physician resource requirements now and in the future.

Based on the results of this work, we have concluded that there is indeed a problem with the effective supply of physician resources in Ontario. This problem, together with a maldistribution of physician resources, will continue to grow unless Ontario immediately takes comprehensive steps to plan and manage the physician workforce, and to make more effective use of other health providers and resources.

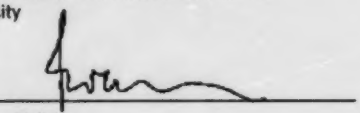
The Expert Panel has considered a variety of strategies and initiatives, and now offers recommendations that, taken together, represent a comprehensive, systems-level approach to ensuring the right number, mix and distribution of physician resources. The recommendations include measures that will address the effective supply of physician resources in the short, medium and long-term.

The underlying theme of our report centres on building capacity. To provide our growing and aging population with the right number and mix of skilled health professionals to deliver high quality services, we must begin now to build and shape our resources. In particular, the Panel felt that there exists a great need, and a unique opportunity, to build the capacity for: integrated health human resources planning; larger and more effective education and training programs, including decentralized education and training; and flexible, effective recruitment and retention initiatives. This capacity-building will require significant investment in resources such as universities, hospitals, and information technology. However, the return on this investment will be measured in improved quality of care, better access to care and a sustainable health care system that can meet health needs in the future.

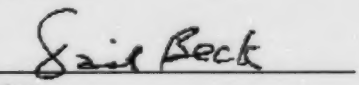
The members of the Expert Panel have developed a comprehensive plan of action that provides clear direction to the Government for shaping the future physician workforce. The success of this strategy will depend on implementation of all of the recommendations together with continuous monitoring and evaluation to make adjustments as required. The opportunity to shape a physician workforce that will meet the needs of the population in the new millenium is now. We urge you to seize this opportunity for the benefit of all Ontarians.



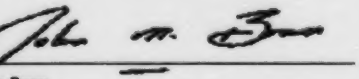
Dr. Peter George
Chair, Expert Panel on Health
Professional Human Resources
President and Vice-Chancellor of McMaster
University



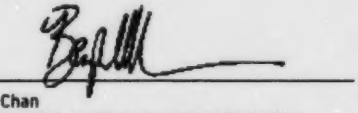
Dr. Peter Walker
Vice-Chair, Expert Panel on
Health Professional Human Resources
Dean of Medicine, University of Ottawa
Chair of the Council of Ontario
Faculties of Medicine



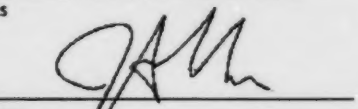
Dr. Gail Beck
Psychiatrist
Ottawa, Ontario



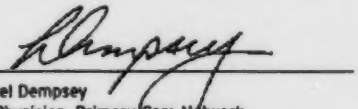
Dr. John Bonn
Registrar, College of Physicians and Surgeons of
Ontario



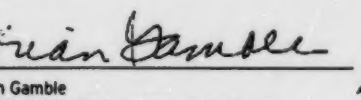
Dr. Ben Chan
Senior Scientist, Institute for Clinical Evaluative
Sciences



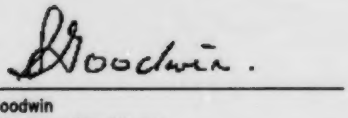
Joe deMora
President and CEO,
Kingston General Hospital
(formerly CEO of the Sudbury Regional Hospital)



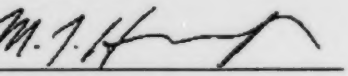
Dr. Laurel Dempsey
Family Physician, Primary Care Network
Verona, Ontario



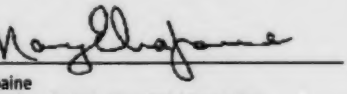
Dr. Brian Gamble
Family Physician, Primary Care Network
Chatham, Ontario



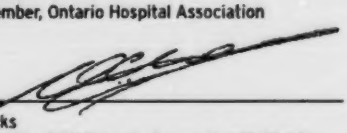
Sharon Goodwin
Chair of the Nurse Practitioner
Association of Ontario
Director of Operations, Clinidata



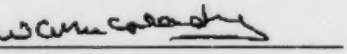
Dr. Michael Howcroft
Ophthalmologist, St. Michael's Hospital



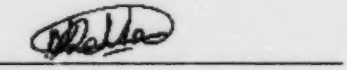
Mary Lapaine
Board Member, Ontario Hospital Association



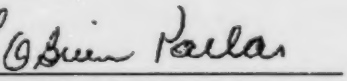
Ron Loucks
Executive VP - BCE Emergis Assure Health Division



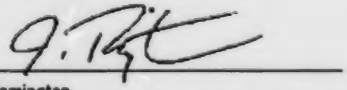
Dr. William McCready
Nephrologist
Chair of Northwestern Ontario Medical Program



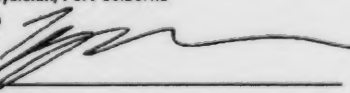
Neera Mehta
Employment Counsellor, Kitchener-Waterloo
Multicultural Centre



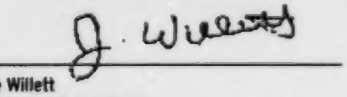
Dr. Linda Lee O'Brien-Pallas
Co-principal Investigator
Nursing Effectiveness, Utilization and Outcomes
Research Unit



Dr. Jeff Remington
Chair, Niagara Physician Planning Task Force
Family Physician, Port Colborne



Dr. Joshua Tepper
Past-President,
Professional Association of Internes and Residents of
Ontario



Dr. Janice Willett
Obstetrician, Sault Ste Marie
Ontario Medical Association

ACKNOWLEDGEMENTS

Members of the Expert Panel gratefully acknowledge the assistance of senior staff at the Ministry of Health and Long-Term Care:

Colin Andersen
Assistant Deputy Minister, Integrated Policy and Planning Division

George Zegarac
Executive Director, Integrated Policy and Planning Division

Helga Loechel
Manager, Provincial Health Services Planning Unit

In addition, Panel members would like to thank the following individuals for their valuable support and assistance:

Caroline Abrahams
Project Manager, Expert Panel on Health Professional Human Resources

Jean Bacon
Writer

Paul Donoghue
Assistant VP, Health Sciences
McMaster University

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Sheila Rennie
Jason Tung
Daniella Mosu
Susan Pfeiffer
Gabriella Martin

Executive Summary

Over the next 10 years, Ontario's population is expected to increase by about 12%, and age significantly. As the population grows and ages, its need for health services will also grow. Government has made a commitment to meet those needs. In the Communiqué on Health issued in September 2000, Canada's First Ministers agreed to: "ensure that each government or jurisdiction has the people with the skills needed to provide appropriate levels of care and health services." In Ontario's April 1999 "Blueprint" and the Ontario 2000 Budget, the government underlined its commitment to ensure all communities across the province have access to physician services.

Yet there are signs - physician shortages in some parts of the province, nursing shortages, waiting lists - that Ontario's health care system (like those in other provinces) may not have the number and mix of human resources to meet health needs. Recent reports from Dr. Robert McKendry (the Fact Finder on Physician Resources in Ontario appointed by the government and the Ontario Medical Association in 1999), the Canadian Medical Forum and the Institute for Clinical Evaluative Sciences - all released late in 1999 – specifically identified problems with the supply, mix and distribution of Ontario's physician services. These problems are occurring at a time when the province has made significant commitments to increase certain priority health services to meet the needs of an aging population, such as cardiac care and cancer care - commitments that will increase the need for health professionals, including physicians.

To address these needs and ensure Ontario has the right supply, mix and distribution of physician services in the future, the Minister of Health and Long-Term Care established the Expert Panel on Health Professional Human Resources. The 18-member panel, chaired by Dr. Peter George, President and Vice-Chancellor of McMaster University, brought together a wide range of expertise and perspectives, including urban areas, rural communities and the North.

Having reviewed Dr. McKendry's work and other relevant research, the Expert Panel proposes that Ontario take a strategic, systems-wide approach to health workforce planning. The problems cannot be solved by simply adjusting the number of students going into the system. They require a more comprehensive approach, one that will address all the factors - including education, incentives, demographics, public expectations and health policies - that affect where and how health professionals practice and the type of services they provide.

To shape the physician workforce to meet health needs, the Expert Panel suggests Ontario take four steps to build its capacity to plan for, educate, recruit, and retain physicians.

I. PLAN PHYSICIAN SERVICES TO MEET NEEDS

Although human resources are only one component of a complex health care system,[1] they are the most difficult part to plan and manage. This is due to the length of training (nine to 12 years for physicians, five years for nurse practitioners), the fierce competition for mobile Ontario-trained health professionals, the explosions in new knowledge, changing demographics (the growing number of female physicians who may practise differently and who tend to work fewer hours than male physicians early in their careers when they have family responsibilities), changing practice patterns (many physicians no longer provide the full range of services in their specialty) and changing attitudes towards workload (most physicians want to lead more balanced lives).

To plan effectively, the system must identify and understand health needs, and then use its resources to meet those needs. Ontario's past efforts to plan and manage physician services have been hampered by the lack of accurate consistent data on physician supply and on the population's health needs. They have also suffered from the lack of ongoing monitoring, and the inability to adjust plans and targets to reflect changes in needs, practice, knowledge or technology.

In the course of its work, the Expert Panel, with the Ministry of Health and Long-Term Care (MOHLTC), the Institute for Clinical Evaluative Sciences (ICES) and the Ontario Physician Human Resources Data Centre (OPHRDC) developed a new, more robust master physician database, called the Ontario Physician Workforce Database. The Panel also developed a data-driven modelling approach to estimate Ontario's future physician requirements. But these are only the first steps towards effective workforce planning, and they must be continuously monitored and evaluated to ensure they are accurate and achieve their goals. To develop the capacity for ongoing, effective, needs-based, evidence-driven health human resource planning, the Expert Panel recommends that:

#1 MOHLTC establish the Health Human Resources Advisory Panel (HHRAP), a permanent, expert advisory body responsible for continually monitoring and anticipating the health needs of Ontarians and making recommendations on the appropriate supply, mix and distribution of health human resources to meet health needs. HHRAP should develop the capacity for integrated health human resources planning, beginning with building the capacity for physician services planning. MOHLTC should review HHRAP after its first three years of operation to ensure its efficacy.

#2 HHRAP, with the financial support of the MOHLTC, continue to refine and use the Ontario Physician Workforce Database as the basis for physician workforce planning, and work with the other professions to develop comparable high quality workforce databases.

1 *The health care system is a complex mix of policies, programs, funding, people, knowledge, buildings, equipment, and products.*

II. PROVIDE APPROPRIATE EDUCATION

One of the main causes of inequities in Ontario's health care system is the maldistribution of health resources – including the physician workforce. While Ontario has physician shortages throughout the system, the shortages are particularly acute in rural and remote areas. Because of this, the Expert Panel has focused its attention primarily on the health care needs of Ontario's rural and remote populations.

Experience in other jurisdictions indicates that rural physicians do not just happen, they have to be nurtured and developed. For example, physicians are more likely to choose to practice in rural, remote or underserviced areas when they come from rural areas, receive a significant portion of their training in rural or remote areas, and participate in a dedicated rural training stream.

To create more rural physicians, Ontario must change the way it educates its physician workforce, and the training infrastructure now in place. It must develop the capacity – in all regions of the province – to provide education that prepares physicians to work where they are needed, and to encourage a multidisciplinary approach to education and practice.

DECENTRALIZE AND STREAM MEDICAL EDUCATION

The Expert Panel carefully reviewed proposals for ways to restructure medical education, including a proposal for a new medical school in northern Ontario and a proposal to develop a regional medical program, based in Windsor. The Expert Panel supports the goals and intent of the submissions. At issue is the most cost-effective and sustainable way for Ontario to achieve those goals. In the Panel's view, it will take time for the different regions of the province to develop the capacity to provide medical education independently, and the existing academic health science centres (AHSCs) should be key resources in that process. Once the capacity for rural medical education is developed, the system will have the potential to develop free-standing rural medical schools, if required.

To develop the capacity to provide appropriate education, the Expert Panel recommends that:

#3 Ontario's medical schools build on existing relationships and infrastructure to create in Thunder Bay, Sudbury and Windsor university-based clinical education campuses (CECs) that have the capacity to deliver decentralized medical education.

#4 The Ontario Government, in collaboration with the federal government, provide:

- **the funding to support the capital development and operating cost of three CECs, including the university and hospital/training site costs to provide decentralized medical education**
- **the initial investment to develop the information technology infrastructure required to support decentralized medical education, including broad-band videoconferencing and telemedicine, with particular emphasis on rural and northern sites**
- **the funding to develop, within the CECs, the capacity for research in health services and population health.**

#5 The Directors of the CECs immediately become members of the Council of Ontario Faculties of Medicine (COFM), and COFM be responsible for co-ordinating the development of an integrated plan for rural, northern and underserviced medical education in Ontario.

#6 MOHLTC and the AHSCs take steps to address the issue of funding, support and incentives for clinical teachers in CECs and AHSCs.

#7 The CECs work with their training sites, communities and the sponsoring universities to develop rural and/or northern medical education streams, including a separate or enhanced admission process based on factors that are most likely to identify students who will choose rural or northern practice.

#8 Ontario's medical schools and CECs work with other health disciplines to identify underserved populations for which they have a responsibility, and develop multidisciplinary streamed training programs designed to meet their health service needs.

#9 Ontario's medical schools and CECs assess the potential for a training stream for clinical scholars, based in rural and northern environments.

#10 HHRAP evaluate the effectiveness of the CECs and sponsoring universities in implementing targeted training streams, and advise MOHLTC on future investments in training for rural and northern medicine, underserviced populations and clinical scholars.

ENSURE QUALITY

In addition to restructuring the education system, the health system must increase its capacity to provide high quality education designed to ensure that all health professionals provide appropriate care targeted to the population's health needs. Education and ongoing professional development programs should focus on helping health professionals continuously develop and update their skills. To ensure the quality of medical education and provide training that reflects the needs of a decentralized streamed system, the Expert Panel recommends that:

#11 MOHLTC provide the funding to support 28 medical education specialists, distributed among the AHSCs and CECs, responsible for:

- **conducting research in education and professional development**
- **developing educational resources for students and preceptors**
- **improving the quality of medical education in the province.**

#12 Government increase its investment in continuing medical education, and provide funding to support the development of:

- **common educational resources**
- **the digital health library**
- **evaluation tools that can be used to assess the quality/appropriateness of care and guide medical education.**

III. PRODUCE THE RIGHT SUPPLY AND MIX OF PHYSICIAN SERVICES

Decentralizing and streaming medical education has the potential to improve physician distribution, but it does not on its own address the supply and mix of physician services. How many physicians does Ontario need? What skills should they have?

To answer those questions, the province will need increasingly sophisticated planning models that can take into account the complex factors that affect the need for services as well as the physician workforce. The Expert Panel has taken the first steps in developing a needs-based, access modelling approach to planning/forecasting physician services.

Using the model, the Expert Panel was able to look at the impact of a variety of scenarios for physician supply and mix, across a range of critical specialties. For purposes of its recommendations, the Panel made a series of assumptions about the demand for health services, population increases, changes in workload, retirements and migration. It also assumed that, in addition to increasing physician supply, Ontario would institute a number of policies designed to manage both health care services and the demand for care.

To produce the right supply and mix of physician services, the Expert Panel proposes that the health system increase its capacity to:

- produce physicians
- manage the mix of physician skills
- make more effective use of existing resources
- manage the demand for physician services.

PRODUCE PHYSICIANS

Using its data model, which takes into account the growth and aging of the population, changing health needs, the productivity of the current workforce, the current capacity of the medical education system, retirements, migration, changing physician workload, the contribution of other health providers, and other factors that affect the supply of physician services, the Expert Panel was able to project health needs to 2010 and the potential shortfall in physician services. Based on those figures, the Panel estimates that, by 2010, even with focused efforts to manage demand, encourage comprehensive practice and make more effective use of other health care providers, Ontario will need over 1300 new physicians. To meet future health needs, the Expert Panel recommends that:

#13 HHRAP continue to develop and refine sophisticated data models and planning tools that can be used to measure both health needs and the capacity of the system to meet those needs.

#14 MOHLTC and the AHSCs increase undergraduate medical school enrolment by a total of 160 positions (including the 40 positions already added in the fall of 2000). These increases should:

- **be phased in over four years (40 in 2000, 80 in 2001, 20 in 2002 and 20 in 2003) to allow the training system to develop the necessary resources and capacity**
- **allocate a minimum of 60 of the new positions to northern/rural training, and contract with the sponsoring medical schools and the CECs to provide that education**
- **allocate a proportion of the new positions to training streams for underserviced populations (based on the recommendations of HHRAP) and contracting with the appropriate AHSC/CEC to provide that education.**

#15 MOHLTC increase the province's capacity to provide postgraduate medical training by:

- **increasing the number of funded entry level postgraduate training positions by 160 when required to match the increase in undergraduate enrolment**
- **providing funding for salary support and benefits for the additional postgraduate trainees.**

#16 MOHLTC provide additional funding to enable hospitals and other clinical training sites across the province to fulfil their role in undergraduate and postgraduate medical education.

MANAGE THE MIX OF PHYSICIAN SKILLS

Simply increasing enrolment will not necessarily provide the mix of physician services Ontario needs. The specialties that physicians choose and the skills they develop depend on the pool of postgraduate training positions. Every effort must be made to manage that pool and to ensure it produces the "right" mix of specialists to meet the population's health needs. This is particularly important given the increasing subspecialization among internists and surgeons. Although subspecialization may help physicians cope with the increasing complexity of medical care, it reduces the number of "general" specialists available to meet health needs.

#17 HHRAP, in consultation with COFM, take immediate steps to review and provide advice on the current and future mix of specialty training positions, giving particular attention to:

- **specialties identified as being in short supply or having severe problems with distribution, such as anesthesiology, general surgery, obstetrics, ophthalmology, orthopedics, and psychiatry**
- **priority health programs, such as cardiac surgery, oncology and geriatrics**
- **public health.**

#18 MOHLTC provide funding, beginning in 2001, for up to 25 postgraduate positions annually to give postgraduate trainees more opportunity and flexibility to transfer between residency positions. To ensure these positions help meet health care needs, they should be limited to specialties identified in short supply and to specialties required to meet the needs of priority health programs.

#19 MOHLTC provide funding in 2001 for an additional 25 third year residency positions (PGY3) for enhanced Rural Family Medicine targeted to the needs of rural and northern communities.

#20 MOHLTC fund up to 25 of the 160 new entry level postgraduate training positions in 2002 and 2003, with all these positions to be located in the CECs and targeted to the general specialties in short supply.

#21 HHRAP, beginning in 2001, continually monitor and annually evaluate the impact of increases in undergraduate enrolment and the mix of postgraduate positions, and advise on adjustments required to meet health needs.

MAKE MORE EFFECTIVE USE OF EXISTING RESOURCES

The Expert Panel's recommendations on physician supply - combined with the earlier increases made after Dr. McKendry's Fact Finder report - will add a total of about 862 doctors to the physician workforce by 2010 and a total of about 1,700 by 2015, when the full impact of the increases will work their way into the system. Based on the initial data and modelling analysis, this may not meet all the population's need for physician services over the next 15 years - without other changes in the health care system. However, the Expert Panel cautions that its forecasts of the need for physician services and physician supply must be revisited regularly to ensure they reflect both changes in the health care system and improvements in forecasting methods.

To close the gap between need and supply, Ontario will have to make more effective use of other resources in the health care system now and in the future. The Expert Panel has identified five groups that could play a valuable role in improving the supply, mix and distribution of physician services: new graduates, international medical graduates (IMGs), physicians already in practice, nurse practitioners and midwives.

To ensure that Ontario's health resources are used effectively, the Expert Panel recommends that:

#22 MOHLTC provide funding for three years to support the PAIRO Resident Placement Program to assist trainees who are ready to enter the workforce. To determine the long-term potential of this program, HHRAP should:

- **evaluate the success of the program in matching new physicians to communities in need**
- **assess its impact on the supply, mix and distribution of physicians in Ontario**
- **make recommendations, based on the evaluation, about ongoing long-term funding.**

#23 MOHLTC fund, on a four-year pilot basis, the COFM/CPSO proposal to license up to 25 fully qualified IMGs annually. Funding should be provided to screen potential candidates, and to allow each successful candidate to undergo up to six months of assessment and, if necessary, up to two years of postgraduate training. The program will be limited to specialties or communities in short supply. HHRAP should evaluate the impact of the program on the supply, mix and distribution of physician services in Ontario, and advise on the future of this program.

#24 HHRAP assess and provide advice on incentives to encourage existing specialists and family physicians to provide more of the services that are in short supply, such as psychiatry and obstetrical care. HHRAP also assess the impact that the cost of liability insurance has on access to certain health services and provide advice on how to address this issue.

#25 MOHLTC take steps to remove the barriers to collaborative physician/nurse practitioner primary care practice, and provide the funding to integrate a minimum of 75 nurse practitioners a year for the next five years into collaborative physician/NP practice, starting first in settings where collaboration has been successful.

#26 HHRAP assess the potential to double the number of nurse practitioners entering the workforce each year, beginning no later than 2006. The assessment should include the ability to recruit, train and place nurse practitioners, as well as the impact that doubling production of nurse practitioners will have on nursing supply in the province.

#27 MOHLTC work with hospitals to remove any artificial barriers that may prevent midwives from functioning appropriately within their scope of practice, thereby increasing the proportion of unassisted low-risk deliveries that midwives are able to perform each year.

MANAGE DEMAND

While all these initiatives to increase or maximize supply will help, the Expert Panel believes that not all Ontario's efforts to manage the system should focus on supply. Some attention should also be given to managing demand and ensuring that people use health services appropriately. The Expert Panel recommends that:

#28 MOHLTC develop initiatives designed to reduce inappropriate use of health services by educating the public about when to see a physician or other health care provider.

IV. ATTRACT AND RETAIN PHYSICIANS WHERE THEY ARE NEEDED

As of December 2000, 107 Ontario communities (33 in the North and 74 in the South) were designated as undersupplied for family physician services and were looking for a total of 456 family physicians. In addition, 12 communities in the North were designated as undersupplied for specialist services and were looking for a total of 123 different specialists.[2]

These figures highlight the need for physicians in underserviced areas. They also indicate how crucial it is for Ontario to keep the physicians who are already working in rural, northern and underserviced communities. Although Ontario has developed a number of successful initiatives to recruit physicians to underserviced areas, it has few incentives to retain them.

Decentralized, streamed training programs have the potential to attract a significant number of physicians to underserviced areas, but physicians will only stay if they have collegial support (the critical mass of physicians and other health care providers to meet needs and share on-call), appropriate facilities, adequate compensation, and access to continuing medical education. For physicians in rural practice, compensation, lifestyle and opportunities for family members are extremely important. To make rural practice more attractive for the physicians there now and those who will enter the workforce in the future, Ontario must act now. The Expert Panel recommends that:

#29 HHRAP develop an equitable, workable rurality index for specialty and family practice that can be used to quantify the degree of rurality and remoteness of physician practice in different communities across Ontario, and form the basis for compensation and incentive programs.

#30 MOHLTC, in consultation with HHRAP and the Physician Human Resources Subcommittee of the OMA/MOHLTC Physician Services Committee:

- **establish a menu of incentives/initiatives for physicians based on their degree of rurality**
- **make an initial allocation of at least $10,000,000 in 2001 (over and above any existing contracts) to fund those incentives**
- **determine the future funding requirement for incentives.**

2 *Specialists are also in short supply in parts of southern Ontario, but there is no program to track the need for specialized services in the south.*

CONCLUSION

The Expert Panel's recommendations represent a comprehensive, strategic, system-wide approach to physician workforce planning. Taken together, they offer Ontario the opportunity to plan and manage physician services effectively. Implemented selectively, they will fail to have the desired impact and could have serious negative effects on the health care system.

Panel members caution the Ministry of Health and Long-Term Care about the risk of implementing certain recommendations, and ignoring others. For example, if the ministry makes the recommended increase in physician supply, without making fundamental changes to the education and training system, the inequities (i.e., distribution problems) in the system will become more acute. If it implements the proposed increase in supply, but does not develop other supportive health policies (i.e., efforts to manage demand for services, policies to encourage more comprehensive practice and greater collaboration between physicians and nurse practitioners), then the province will continue to struggle with a shortfall in physician services. To achieve its goals, the ministry must use all the available levers and tools, including planning, undergraduate education, postgraduate training, continuing medical education, incentives and other health policies that can shape physician practice.

The Expert Panel recognizes that its recommendations will have significant cost implications for medical schools, hospitals and other training sites, and incentive programs. Based on a rough, preliminary estimate, the costs would be about $45 million in the first year and about $190 million a year in 14 years time when all programs are implemented. Although the costs may seem high, the Expert Panel notes that they amount to less than 1% of Ontario's current health care budget, and stresses that they are an investment in the future.

In the early 1990s, when health care spending was constrained, this plan would not have been possible. However, with the current fiscal climate, Ontario has a unique opportunity to establish the ongoing capacity to plan physician services, to reshape the way physicians are trained, to improve the mix and distribution of physician skills, and to confront inequities in health care. It also has the opportunity to lay the groundwork for integrated health workforce planning, which will be vital for the future of the health care system.

At this point in the evolution of Ontario's health care system, Ontario should make every effort to capitalize on these opportunities. The return on the investment – measured in improved quality and equity of care, greater patient and provider satisfaction, and the sustainability of the health care system – will be substantial. Without this investment, the quality of health care in Ontario will decline, and Ontario's "Blueprint" for a stronger health care system will be at risk. To safeguard the future, Ontario must invest today.

Table of Contents

Introduction	18
Commitment to Health Human Resources	19
About the Expert Panel	20
Tasks	20
Principles	20
Approach	21
About the Report	22
Background	23
The Challenges of Health Human Resources Planning	23
Past Efforts at Physican Resource Planning	24
Current Efforts to Manage Physician Supply	25
Recommendations of the Fact Finder	25
Other Views	26
The Impact of New/Expanded Programs and Health System Reform	26
Progress in 2000	27
Where We Are Now	29
Discussion, Analysis and Recommendations	30
I. Plan Services to Meet Needs	30
Develop the Capacity to Plan	30
Improve the Data	32
II. Provide Appropriate Education	33
The Argument for Decentralizing and Streaming Medical Education	34
A Plan for Integrated Rural, Northern and Underserviced Medical Education	35
Decentralize Medical Education	36
Structure	37
Co-ordination	37
Technology	38
Research	38
Clinical Teachers	38
Develop Appropriate Training Streams	39
Underserviced Areas: Rural and Northern Education Streams	40
Underserviced Populations: Aboriginal and Urban Poor Streams	43
Clinical Scholars, Academics and Researchers	43
Ensure Quality	44
Education Masters	45
Common Curriculum Resources	45
Evaluation Tools	46
III. Produce the Right Supply and Mix of Physician Services	48
Developing Data Models for Planning Physician Services	48
Brief Snapshot of Expert Panel Access Modelling	49
Limitations of the Modelling	49

Findings 51
Distribution Issues 52
Predicting the Future 53
Data Results 56
How Many Physicians Will Ontario Need? 56
What Types of Physicians Will Ontario Need? 57
What is Ontario's Capacity to Meet Priority Health Needs? 57
Refining the Models 58
Increasing Ontario's Capacity to Provide Physician Services 59
Produce Physicians 61
Manage the Postgraduate Training System 62
Make More Effective Use of Existing Resources 65
Retain New Graduates 65
Recruit Qualified International Medical Graduates 66
Encourage Physicians to Provide More Comprehensive Care 67
Promote Collaborative Physician/NP Practice 68
Remove Administrative Barriers to Midwifery Practice 70
Manage Demand 71

IV. Attract and Retain Physicians Where They are Needed 72
Develop a Rurality Index 73
Develop a Menu of Retention Incentives 74
What Works Now 74
What Needs Improvement 75
Proposed Incentives 75

Implementation Costs and Timelines 77
Preliminary Cost Estimates 77
Proposed Implementation and Evaluation Timeline 78

Conclusion 80

Appendices
1. Members of the Expert Panel and Working Groups 82
2. Submissions and Presentations to the Expert Panel 86
3. Access Modelling for Health Care Services 88
4. Response to McKendry Recommendations 105

Bibliography 111

Index to Recommendations

I. Plan Services to Meet Needs

Recommendation #1 30

Recommendation #2 32

II. Provide Appropriate Education

Recommendations #3, #4, #5, #6 39

Recommendations #7, #8, #9, #10 44

Recommendations #11, #12 47

III. Produce the Right Supply and Mix of Physician Services

Recommendation #13 58

Recommendations #14, #15, #16 62

Recommendations #17, #18, #19, #20, #21 64

Recommendations #22, #23, #24, #25, #26, #27, #28 71

IV. Attract and Retain Physicians Where They Are Needed

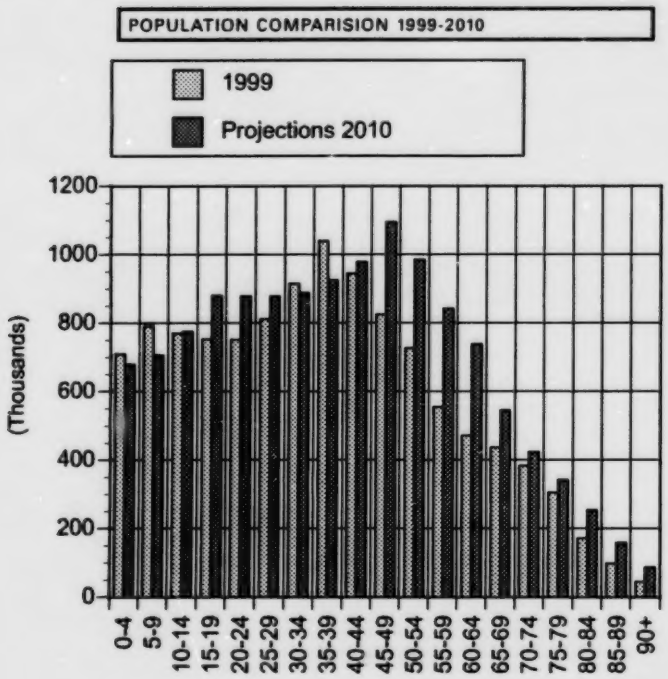
Recommendation #29 73

Recommendation #30 75

Introduction

The 11.7 million people who call Ontario home expect to have the health services they need, when they need them: now and in the future.

Over the next 10 years, Ontario's population is expected to increase by 12%, and the population will also age significantly.



As the population increases and ages, its need for health services will grow.

The Ontario Ministry of Health and Long-Term Care (MOHLTC) is committed to providing the services people need as close to home as possible. On September 11, 2000, Canada's First Ministers issued a Communiqué on Health, stating that:

... the key goals of the health system in Canada are to: preserve, protect and improve the health of Canadians; ensure that Canadians have reasonably timely access to an appropriate, integrated and effective range of health services anywhere in Canada, based on their needs, not their ability to pay; and ensure its sustainability so that health care services are available when needed by Canadians in future years.[3]

In Ontario's "Blueprint" the government's policy platform for a stronger health care system and the recent Ontario Budget, the government underlined its commitment to ensure that all communities across the province have access to physician services. Yet there are signs that Ontario's health care system (like those in other provinces) may not have the number and mix of human resources to meet health needs or to provide equitable access to health services. As of the fall of 2000:

- **107 communities (33 in the north and 74 in the south) – up 9% from October 1999 – were designated as undersupplied for family physician services and were looking for a total of 456 family physicians**
- **12 communities in the north were designated as undersupplied for specialist services and were looking for a total of 123 different specialists[4]**
- **Ontario was struggling to deal with a nursing shortage and, by the year 2007, is anticipating a cumulative loss of between 17,000 and 18,000 experienced working nurses due to retirements alone[5]**
- **1,642 of 3,116 family physicians surveyed were not taking new patients; in 14 of 26 selected counties, over 75% of family physicians surveyed were not taking new patients; and 78 of 228 communities (34%) with a population of <10,000 had no open practices[6]**

3 *First Ministers' Meeting Communiqué on Health. Canadian Intergovernmental Conference Secretariat. Ottawa, Ontario. September 11, 2000.*

4 *Specialists are also in short supply in parts of southern Ontario, but there is no program to track the need for specialized services in the south.*

5 *O'Brien-Pallas L, Baumann A. Towards evidence based policy decisions: A case study of nursing health human resources in Ontario, Canada. Nursing Inquiry. (7)4:248-257. 2000.*

6 *Family Medicine Practitioners Taking New Patients in Selected Counties in Ontario. Ontario Physician Human Resources Data Centre. November 2000.*

- patients referred to a medical specialist were waiting between 5.5 and almost 12 weeks for a first consultation; patients referred to a surgical specialist were waiting between three weeks and 14 weeks for a first consultation[7]
- non-urgent patients referred to a cardiac specialist were waiting about eight weeks for a first appointment in most parts of the province except the northeast and the northwest, where the waiting times were over 16 and 24 weeks respectively[7]
- 1,889[8] breast and prostate cancer patients had been re-referred from their home treatment centre to treatment centres in the north or in the United States because of a shortage of cancer care providers in southern, central and eastern Ontario.

COMMITMENT TO HEALTH HUMAN RESOURCES

In the Communiqué on Health, the First Ministers specifically addressed the issue of health human resources, and agreed to: "ensure that each government or jurisdiction has the people with the skills needed to provide appropriate levels of care and health services. Their governments will coordinate efforts on the supply of doctors, nurses and other health care personnel so that Canadians, wherever they live, enjoy reasonably timely access to appropriate health care services. Their governments will also work together to identify approaches to improve education, training, recruitment and retention of our future health workforce."

How will Ontario fulfill this commitment? What can the province do to develop and shape its health human resources to meet health needs?

The work is already underway. In February 2000, Elizabeth Witmer, the Minister of Health and Long-Term Care established the Expert Panel on Health Professional Human Resources, chaired by Dr. Peter George, President and Vice Chancellor, McMaster University. The Panel's task was to:

> **Provide advice on the most effective ways to ensure an adequate supply of physician services and appropriate use of other health professionals over the medium to long-term in Ontario.**

7 *Ontario Physician Human Resource Data Centre. 2000.*

8 *Since January 1999, when the rereferral program started.*

ABOUT THE EXPERT PANEL

TASKS

The Expert Panel on Health Professional Human Resources was charged with five tasks:

- Provide advice on strategies to ensure an adequate supply of physician services, including changes in medical school enrolment and the recruitment of International Medical Graduates (IMGs)
- Examine the appropriate use of other health professionals
- Identify strategies to ensure more effective distribution of physician services
- Provide advice on changes to the medical education system to ensure an appropriate mix of physician services
- Develop a framework to assess physician human resource requirements.

PRINCIPLES

The Expert Panel based its work on the following principles:

Rights and Responsibilities

1. All Ontario residents should have timely access to health care from a suitably qualified health care professional.
2. Recognizing that health care professionals exist to serve the public, strategies to improve physician supply and distribution should balance the needs of the individual with the needs of the individual health care provider.
3. Health professionals should provide appropriate services. Consumers should be educated and encouraged to use health services responsibly.

Overall Planning

4. A sustainable supply of physician services should exist within an affordable health care system.
5. Planning for physician services should be aimed at ensuring that Ontario is self-sufficient in the supply of health care professionals.
6. Planning for physician services should be needs-based, evidence-driven and continually monitored to anticipate and respond quickly to required changes in needs.
7. Planning for physician services should be flexible and reflect differences in health needs and models of care among various communities and regions throughout the province.
8. Medical education and postgraduate training in Ontario should be based on a provincial planning framework for physicians.

9. Regional physician workforce plans should be developed within a provincial framework and closely co-ordinated with provincial and national workforce initiatives.

10. The needed supply and mix of physicians will be affected by the number and mix of other health care providers.

11. The supply and mix of physicians is influenced by the degree of access to appropriate infrastructure and facilities such as ambulatory care centres, operating rooms and intensive care units.

12. Strategies to improve the distribution of health care professionals should be designed to attract and encourage them to practice in areas of need rather than penalizing them for not doing so.

APPROACH

Focus

Because of the key role that physicians play in the health care system, the current shortage of physician services, the long lead-time required to train physicians, and the mandate it was given, the Panel decided to focus primarily on issues related to physician services, taking into account other health professionals that provide those services.

Structure

To analyze and address the key issues, the Expert Panel established three working groups: the Working Group on Data and Modelling, chaired by Dr. Ben Chan; the Working Group on Supply, chaired by Dr. Michael Howcroft; and the Working Group on Distribution, chaired by Dr. William McCready.

The working groups, which were made up of Expert Panel members as well as others with knowledge and expertise in these areas (see Appendix 1), gathered information and developed recommendations, which were presented to the Expert Panel for discussion and decision.

Activities

The Expert Panel's work over the past 10 months focused primarily on two activities:

1. Improving physician workforce data and developing more sophisticated data modelling and forecasting tools (primary research)

2. Reviewing the extensive work that has already been done on managing physician resources in Ontario, Canada and other jurisdictions, and assessing the feasibility, effectiveness, cost and potential impact of various strategies (secondary research).

In the course of their work, members of the Expert Panel reviewed:

- the recent major reports on health human resources in Ontario and other jurisdictions

- submissions from the north and from southwestern Ontario, proposing strategies to educate physicians for practice in northern, rural and underserviced settings
- papers and recommendations prepared by different medical specialty groups and other provider groups. (For a list of submissions and presentations to the Expert Panel, see Appendix 2.)

In addition, the Panel monitored health human resource strategies in other provinces and jurisdictions facing the same issues.

In an attempt to develop new data modelling tools, the Expert Panel worked with data modelling experts from the Institute for Clinical Evaluative Sciences (ICES), the Ontario Physician Human Resource Data Centre (OPHRDC), the Canadian Medical Association (CMA) and the Nursing Effectiveness, Utilization and Outcomes Research Unit. In addition, the working group applied the Physician Resource Evaluation Template (PRET) model developed by the CMA. It also gathered data on education and retention strategies that have proven effective in meeting the needs of underserviced areas, on the collaborative practice of primary care physicians and nurse practitioners (NPs), and on services provided by midwives.

Strategic Approach: System-wide, Needs-based, Evidence-driven

The Panel used state-of-the-art conceptual and evidence-driven approaches to health workforce planning. Its recommendations about physician numbers are based on an attempt to measure the population's service needs, identify the right number and mix of physicians and other professionals to provide that level of service, and then shape services to meet needs. Its recommendations for physician recruitment, education and retention are based on evidence that similar approaches have worked well in Ontario or in other jurisdictions and can be adapted to Ontario.

In developing its recommendations, the Panel adopted a strategic, systems-wide approach designed to address all factors that affect physicians' practice and the type of services they provide, including how physician services are planned, where and how physicians are educated, other providers who can contribute to the supply of physician services, and physicians' working conditions and incentives.

ABOUT THE REPORT

In this report, the Expert Panel on Health Professional Human Resources lays out four key steps that Ontario can take to develop the ongoing capacity to shape health human resources to meet health needs, beginning with physician services.

1. Plan services to meet needs
2. Provide appropriate education
3. Produce the right supply and mix of physician services
4. Attract and retain physicians where they are needed.

Background

CHALLENGES OF HEALTH HUMAN RESOURCES PLANNING

Although human resources are only one component of a complex health care system,[9] they are the most difficult part to plan and manage. This is due to:

- the time required to produce skilled health professionals – nine to 12 years to train a physician, up to four years to train a registered nurse, and another year beyond a BScN to prepare a nurse practitioner
- the competition for mobile Ontario-trained health professionals – in Canada and in other parts of the world
- the explosion in new knowledge and treatments – which makes it difficult for training programs and health professionals to keep current with new developments and, at the same time, affects practice patterns
- the impact of broad health policies, such as primary care reform, mental health reform, health services restructuring, and the restructuring of long-term care services – which can create uncertainty in the workplace and affect attitudes and morale
- changing demographics – the increasing number of female physicians, who tend to practice differently and work fewer hours than male physicians, particularly when their children are young; and the large cohort of physicians who are reaching retirement age – which will affect the total number of physicians required to deliver the same level of service
- changing practice patterns – the growing number of physicians reluctant to maintain an onerous workload and seeking more balance between their professional and personal pursuits, which will affect the total number of physicians required to deliver the current level of service
- the pressure and demands of the current health care system, and their impact on morale and on the willingness of people to enter and stay in health-related careers.

Efforts to plan and manage Ontario's physician human resources planning are also complicated by the fact that physicians have traditionally been viewed as a national resource. Ontario is committed to a national strategy for physician resources, and must be sensitive to the impact that any of its health human resource policies and decisions may have on the other provinces.

9 *The health care system is a complex mix of policies, programs, funding, people, knowledge, buildings, equipment, and products.*

PAST EFFORTS AT PHYSICIAN RESOURCE PLANNING

Past efforts at physician resource planning have been hampered by the inability to identify and forecast needs or supply accurately, the inflexibility of the medical education system, the inability to assess the impact of training, working conditions and other factors on physician practice, and the tendency to invest in short-term solutions, rather than developing the capacity for ongoing, long-term planning. Past decisions have also often been based more on financial imperatives, than on population health needs. In fact, past efforts to manage physician resources have often created serious problems. For example:

- The recommendations of the Hall Commission Report (1964) dramatically increased Canada's capacity to produce physicians and to attract foreign trained physicians (i.e., international medical graduates or IMGs). However, the projected population growth on which the Commission's recommendations were based did not materialize. For a number of years after, Canada continued to have a physician oversupply – even after moving (in 1975) to limit opportunities for international medical graduates.

- Faced with growing deficits and pressure to contain health care costs, federal, provincial and territorial governments adopted some recommendations of the Barer Stoddart report (1991), cutting undergraduate medical school enrolment by 10% and reducing post-graduate positions (effective 1993). However, the governments did not act on the report's other interdependent recommendations about payment methods and models of care, which were designed to influence how the smaller number of physicians would work as well as the services they would provide.

- Financial pressures also led to policies, such as claw backs, proposed billing number restrictions and new entrant discounts, that had an adverse effect on physician morale and led to an increase in physician migration from Ontario.

As a result of a combination of actions and decisions, Ontario – like most other provinces in Canada – is now faced with a physician supply problem that will only be exacerbated by the full impact of the 1993 reductions (which will affect the graduating class of physicians beginning in 2000) and by the significant proportion of older physicians who are expected to retire in the next 10 to 20 years.

According to the Canadian Institute for Health Information (CIHI), Ontario's physician to population ratio dropped 3.2% between 1995 and 1999. In 1999, Ontario had 179 physicians per 100,000 population compared to a national average of 186 physicians per 100,000 population. Based on that 1999 data, Ontario is tied for fourth with Manitoba in the number of physicians to the size of the population, trailing Quebec, B.C. and Nova Scotia.

CURRENT EFFORTS TO MANAGE PHYSICIAN SUPPLY

In the spring of 1999, the Joint MOHLTC/Ontario Medical Association (OMA) Physician Services Committee expressed concern that, given the province's increasing and aging population, the smaller number of new physicians being produced and the aging of the physician workforce, Ontario might not have enough doctors to meet current and future needs. In response, the Minister of Health and Long-Term Care, Elizabeth Witmer:

- appointed, in July 1999, a **Fact Finding Commissioner,** Dr. Robert McKendry to help understand the problem. His task was to assess the scope and nature of Ontario's physician supply, mix and distribution problems, and to recommend some short-term solutions
- announced in December 1999, the **Expert Panel on Health Professional Human Resources,** chaired by Dr. Peter George, to begin the process of long-term planning for health human resources, starting with physician resources, and to recommend medium to long-term solutions. The Panel began its work in February 2000.

RECOMMENDATIONS OF THE FACT FINDER

In his December 1999 report[10], Dr. McKendry confirmed that, based on the research he conducted across the province, Ontario has a growing, pervasive problem with the "effective supply"[11], mix and distribution of physician services. In his view, the pressures on the system are coming from the increasing population, the growing number of female physicians who, in the early years of their career, work fewer hours than their male colleagues, the desire of all physicians to lead more balanced lives, the current level of physician migration, the aging of the physician pool, and the drop in the number of new graduates. According to McKendry, the province's current tight physician supply is exacerbating the province's long-standing problem of physician distribution

He recommended that Ontario use a number of strategies to increase total physician supply by about 5% or about 1000 physicians overall, including increasing medical school enrolment by about 20% and, at the same time, addressing the province's long-standing problems with distribution. He suggested that Ontario focus first on implementing short-term solutions to attract already trained physicians, and then on developing long-term opportunities to provide more training and experience in rural medicine, which will attract and prepare physicians who will choose rural and remote practice. In addressing the problem of distribution, he suggested that the province assess the feasibility of establishing a new medical school, located in northern Ontario, with a mission to prepare physicians for northern and rural practice.

He also recommended that Ontario take steps to improve its ability to assess population health needs, plan and manage physician services, recruit and retain physicians where they are needed, and make more effective use of other health professionals, particularly nurse practitioners.

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10 *McKendry R. Physicians for Ontario. Too Many? Too Few? For 2000 and Beyond. Report of the Fact Finder on Physician Resources in Ontario. Ontario Ministry of Health and Long-Term Care. December 1999.*

11 *Effective supply is the actual amount and type of physician services available to meet societal health care needs. It is a measure of physician productivity, calculated by analyzing the collective work habits of individual physicians (How much do they work? What kind of services do they provide?). Effective supply takes into account the nature of the services provided and overall productivity (i.e., throughput). Source: McKendry RM. Physicians for Ontario. Too Many? Too Few? For 2000 and Beyond. Report of the Fact Finder on Physician Resources in Ontario. December 1999.*

OTHER VIEWS

About the same time Dr. McKendry's report was released, the Canadian Medical Forum[12] Task Force on Physician Supply in Canada produced a major report on physician services in Canada. It concluded that, to avoid a serious physician shortage and decline in quality of care, Canada will need about 2500 new physicians each year (an increase of about 4% per year), and recommended increasing enrolment in Canadian medical schools to 2000 by the year 2000 (an increase of about 27% over 1998 levels).

Around the same time, the Institute for Clinical Evaluative Sciences issued an Atlas Report, ***Supply of Physicians' Services in Ontario***, prepared by Dr. Ben Chan. That report identified some key issues in physician practice patterns, in particular:

- increasing subspecialization among internists and surgeons, which may help physicians cope with the increasing complexity of medical care but also reduces the number of "general" specialists available to serve rural areas and may contribute to the maldistribution problem.
- the decreasing number of family physicians who provide "comprehensive" care, such as providing services in hospital inpatient wards, nursing homes and emergency rooms, or providing anesthesia or obstetrical services.

As Ontario's health care system has traditionally relied on family physicians to provide a range of services outside their offices, and on general specialists and specially trained family physicians to provide specialized services, particularly in smaller communities, these trends have serious implications for the effective supply of physician services. Dr. Chan suggests that simply adding more physicians to the system won't be enough to solve the physician supply problem. There must be other incentives to encourage physicians to go where they are needed and to provide the full breadth of services required.

THE IMPACT OF NEW/EXPANDED PROGRAMS AND HEALTH SYSTEM REFORM

Over the next 10 to 20 years, Ontario expects to see a significant increase in demand for a number of services associated with aging, such as cardiac care, cancer care, joint (hip and knee) replacements, dialysis, and specialized geriatric services.

MOHLTC has taken steps to increase the system's capacity to meet these priority health needs. For example, it recently announced funding for three new tertiary cardiac centres[13], five new cancer centres[14], a 10% increase in funding for dialysis services, 20,000 long-term care beds (scheduled to come on stream by 2004), an increased number of hip and knee replacements, and new funding for nurse practitioners to work in underserviced areas, primary care reform projects, long-term care facilities and aboriginal communities. While these service expansions will help meet population health needs, they also increase the demand for skilled health professionals in these fields in different parts of the province.

MOHLTC has also identified a serious shortfall in the field of public health. The province's 37 health units currently have 15 vacancies: seven for Medical Officers of Health (MOHs) and eight for Associate MOHs. Over half the positions for community medicine specialists in the City of Toronto have been vacant for over two years. The

12 *The Canadian Medical Forum is made up of 11 different organizations, including the Canadian Medical Association, the College of Family Physicians of Canada, the Royal College of Physicians and Surgeons of Canada, the Canadian Nursing Association, the Association of Canadian Medical Colleges, the Association of Canadian Teaching Hospitals, the Canadian Association of Internes and Residents, the Canadian Federation of Medical Students, and the Consumers' Association of Canada.*

13 *In Mississauga, Kitchener-Waterloo and Newmarket.*

14 *In Oshawa, Mississauga, St. Catharines, Kitchener and Sault Ste. Marie.*

recent health issues related to water quality and safety have highlighted the critical importance of adequate, high quality public health services and the vital role the MOH plays in the community. Ontario must have the skilled professionals to respond to public health needs[15].

Changes are also occurring within the primary care system that may affect physician services. Over the next four years, MOHLTC and the OMA have agreed to shift 80% of family physicians from fee-for-service practices to group practices, based on alternative payment plans. This could have a significant impact on the way physicians practice, the opportunities for interdisciplinary care teams, and the availability of physician services.

Any effort to plan and manage health human resources must take into account these health care priorities and changes.

PROGRESS IN 2000

1. More Postgraduate Training and Placement Support: Implementing McKendry Recommendations

During 2000, MOHLTC quickly implemented a number of Dr. McKendry's recommendations, including:

- providing up to two years of postgraduate training to repatriate up to 15 Canadian physicians (annually) who took their postgraduate training in the United States
- increasing from 24 to 36 the number of positions in the training program for international medical graduates (IMGs) at the University of Toronto
- increasing from 24 to 30 the number of entry level residency positions in the northern family medicine program in Sudbury and Thunder Bay
- increasing from four to 10 the number of third year family medicine positions in Sudbury and Thunder Bay, which offer family physicians additional training in obstetrics, emergency medicine, anesthesiology, care of the elderly and psychiatry
- expanding from 25 to 40 positions the existing re-entry/return-of-service program (MOHLTC is currently reviewing the program to identify ways to attract more applicants)
- increasing from three to six the number of Community Development Officers to help small and rural communities recruit health care professionals.

The McKendry recommendations that were implemented resulted in an increase of 33 new postgraduate training positions, as well as providing opportunities for 21 existing physicians to take additional training.

Later in the year, as part of the 2000 Budget, the government announced an expansion of the Telehealth program established in northern Ontario in 1999 to southern Ontario (which had also been recommended by Dr. McKendry), and will recruit a total of 144 nurses to staff the province-wide service. This health information service has the potential to reduce inappropriate visits to emergency departments and physicians' offices.

15 *According to section 64 of the Health Protection and Promotion Act (HPPA) and Regulation 566, a Medical Officer of Health must be a physician in good standing with the College of Physicians and Surgeons of Ontario and have either:*
- a fellowship in community medicine from the Royal College of Physicians and Surgeons of Canada or
- a certificate, diploma or degree from a university in Canada, granted after not less than one academic year of full-time post-graduate studies or its equivalent in public health. These studies must include epidemiology, quantitative methods, management and administration, and disease prevention and health promotion.

2. Better Data and More Undergraduate Positions: Implementing Expert Panel Interim Recommendations

The ministry referred the remaining recommendations in the McKendry report to the Expert Panel on Health Professional Human Resources for further study.

In the early days of its work, the Expert Panel identified two key issues that should be addressed before the end of its mandate:

- the need to develop a more robust physician database to support its work and provide a sound basis for future planning
- the need to make some immediate, preliminary increases in medical school enrolment for the 2000/01 school year, as recommended by Dr. McKendry. (Several other provinces, including Alberta, Quebec and New Brunswick, had already announced increases in enrolment. The Expert Panel was concerned that, by waiting to determine the exact number of new physicians required, Ontario would "lose" a year.)

To deal with these issues, the Expert Panel recommended that MOHLTC:

Facilitate and finalize the necessary agreements to allow the Institute for Clinical Evaluative Sciences (ICES) and the Ontario Physician Human Resources Data Centre (OPHRDC) to develop a more robust, reliable physician database for Ontario which will allow for development of a workload measure and provide a more accurate assessment of effective physician supply.

Provide funding for an interim increase in undergraduate and postgraduate positions, beginning in September 2000, for the 2000/01 school year.

The ministry acted on both recommendations. It provided resources to facilitate enhancement of the ICES and OPHRDC databases, and to develop more robust baseline data on physicians in Ontario. These data formed the basis for the Panel's data modelling and analysis.

The ministry also increased medical school enrolment by adding a total of 40 undergraduate positions (an increase of 7.6%) in the fall of 2000. The new undergraduate positions were allocated among the Ontario's five medical schools as follows:

Medical School	# of new positions
University of Western Ontario	7
McMaster University	8
University of Toronto	13
Queen's University	5
University of Ottawa	7
Total	**40**

WHERE WE ARE NOW

These increases in physician numbers are only the first step. To be able to provide the right services in the right places, Ontario must take a more systemic approach – one that tries to manage all the factors that affect the supply of physician services, including how services are planned, how physicians are selected and trained, the number required, the available practice opportunities, the incentives provided, and the ongoing support for physicians and other health care providers.

The Expert Panel cautions that, to achieve the desired result – the equitable distribution of physician services to meet health needs – Ontario must adopt a comprehensive approach. It is not enough simply to train more physicians. The province must also develop the ongoing capacity to identify current and future needs, to select and prepare physicians who will have the right skills, to manage all its health resources effectively, and to provide appropriate incentives for physicians and other health professionals.

DISCUSSION, ANALYSIS AND RECOMMENDATIONS

I. Plan Services to Meet Needs

To plan effectively, the system must understand health needs, and how to shape and use all parts of the system to meet needs. But planning health services is no simple task.

How many health services will we need? Will those needs change over the next five to 10 years? How many hospitals, operating rooms, magnetic resonance imaging machines (MRIs) and other facilities will be required to meet needs? How many doctors, nurses and other health professionals will Ontario need? What training and skills will those health professionals have to have? How can Ontario ensure that health services and health professionals are distributed equitably across the province?

Ontario's past efforts to plan and manage its health human resources have been hampered by the lack of accurate consistent data on the supply of physician services and on the population's health needs. Different provincial and national databases report different numbers of physicians, and none has been able to provide comprehensive, consistent information on the exact services physicians provide or their workload. There is also no reliable method to identify or measure health needs, or determine the services required to meet needs. Past efforts at physician workforce planning have also suffered from the lack of ongoing monitoring, and the inability to make adjustments to reflect any changes in needs or the environment.

The 10 months that the Expert Panel has spent assessing the issues has only confirmed the conviction that health human resources planning is not a short-term, time-limited process. The Expert Panel believes that Ontario must start now to develop the capacity for ongoing, effective, needs-based, evidence-driven integrated health human resource planning. In particular, Ontario needs:

- the ability to assess needs, determine the capacity of the system, develop plans, anticipate changes and adjust its plans to reflect changing needs, policies, practices and technology
- more accurate workforce data to understand the issues and guide planning decisions.

DEVELOP THE CAPACITY TO PLAN

In his report, Dr. McKendry recommended that Ontario establish a permanent independent structure responsible for health workforce planning. The Expert Panel agrees with Dr. McKendry's recommendation, and recommends that:

#1 MOHLTC establish the Health Human Resources Advisory Panel (HHRAP), a permanent, expert advisory body responsible for continually monitoring and anticipating the health needs of Ontarians and making recommendations on the appropriate supply, mix and distribution of health human resources to meet health needs. HHRAP should develop the capacity for integrated health human resources planning, beginning with building the capacity for physician services planning. MOHLTC should review HHRAP after its first three years of operation to ensure its efficacy.

OBJECTIVES

HHRAP's key objectives are to:

- Continuously monitor and identify future requirements for physicians and other health professionals based on key indicators of health needs (e.g., demographics, health status, disease incidence), referral patterns, health provider demographics, workload trends, labour market analyses and changes in the health care delivery system
- Recommend planning targets and policy initiatives for a specific planning cycle (e.g., three years)
- Provide for ongoing consultation with regional health agencies, such as district health councils, to identify needs and system changes at a regional or district level
- Liaise with other provincial and national planning bodies, such as the Joint Provincial Nursing Committee (JPNC), the Physician Services Committee (PSC), the Cardiac Care Network (CCN), and Cancer Care Ontario (CCO), as well as research organizations, such as the Institute for Clinical Evaluative Sciences (ICES), the Centre for Health Economics and Policy (CHEPA), the Centre for Rural and Northern Health Research (CRaNHR), and the Nursing Effectiveness, Utilization and Outcomes Research Unit, to assist in addressing specific issues or questions related to health human resource policy and planning objectives
- Evaluate and monitor the impact of policy initiatives and planning targets and recommend changes as required.

STRUCTURE

The Expert Panel proposes a six to eight-member advisory panel, whose members will be chosen based on their broad background, experience and knowledge in health human resource planning in Ontario and other jurisdictions. Members will serve two to three year terms, with the option of renewing for one term. The chair will be appointed by and report directly to the Minister of Health and Long-Term Care.

The panel will be supported by a small dedicated secretariat, with an executive director accountable to the chair. HHRAP would form working groups and ad hoc committees as necessary to address specific technical issues that may be related to a particular profession (e.g., physicians, nurses), a particular sector of health care (e.g., cardiac, cancer, long-term care), or a particular aspect of health human resources (health human resources data, modelling approaches, education, migration, regulation). Working groups and subcommittees would include representation from key stakeholders where appropriate.

HHRAP will meet approximately once every two months to set priorities, review reports from working groups/ad hoc committees, and develop advice for the Minister. It will provide reports/recommendations to the Minister as required as well as an annual report to the Minister and stakeholders.

IMPROVE THE DATA

To plan effectively, Ontario must know how its physician workforce works. In September 2000, on the recommendation of the Expert Panel, MOHLTC worked with the two organizations that maintain key physician databases in the province – the Ontario Physician Human Resources Data Centre (OPHRDC) and the Institute for Clinical Evaluative Sciences (ICES) – to integrate the existing databases and develop a more comprehensive database on all physicians in active practice in Ontario, called the Ontario Physician Workforce Database. With this database, Ontario is now able to:

- accurately count and track the number of physicians in practice, by age and gender
- determine their workload or level of activity (i.e., part-time, full-time, or more than full-time)
- identify their functional specialty (i.e., identify the services they actually provide, as opposed to assuming that they are providing a comprehensive range of services in their specialty of certification). This is important because it eliminates the problem of over-estimating the effective services available to meet health needs. For example, a significant proportion of ophthalmologists may devote a large part of their time to non-Ontario Health Insurance Plan (OHIP) or privately funded activities, such as refractive surgery and cosmetic procedures, and may not be available to meet the population's need for routine, publicly funded ophthalmological services; a significant proportion of obstetrician/gynecologists may not deliver babies; and a proportion of active physicians attached to the academic health science centres (AHSCs) may spend a significant amount of their time in clinical teaching and research rather than in providing care.

The Ontario Physician Workforce Database – which formed the basis for the Expert Panel modelling exercises – can now be used with some confidence to assess the effective supply of physician services available to the public. It will give Ontario the ongoing capacity to determine the effective supply of physician services available to the population, and to assess the impact of any change in factors that can affect supply now and in the future (e.g., retirements, the increase in the number of female physicians, and changes in the comprehensiveness of physician practice patterns).

However, to be an effective tool, the Ontario Physician Workforce Database must be continually maintained and refined, and comparable high quality data must also be available for nurses and other health professionals. The Expert Panel recommends that:

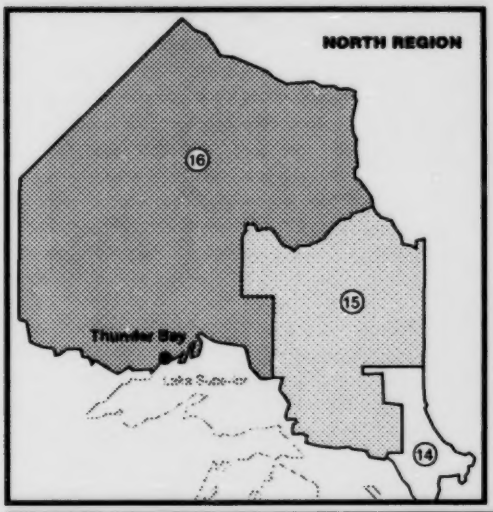
#2 HHRAP, with the financial support of the MOHLTC, continue to refine and use the Ontario Physician Workforce Database as the basis for physician workforce planning, and work with the other professions to develop comparable high quality workforce databases.

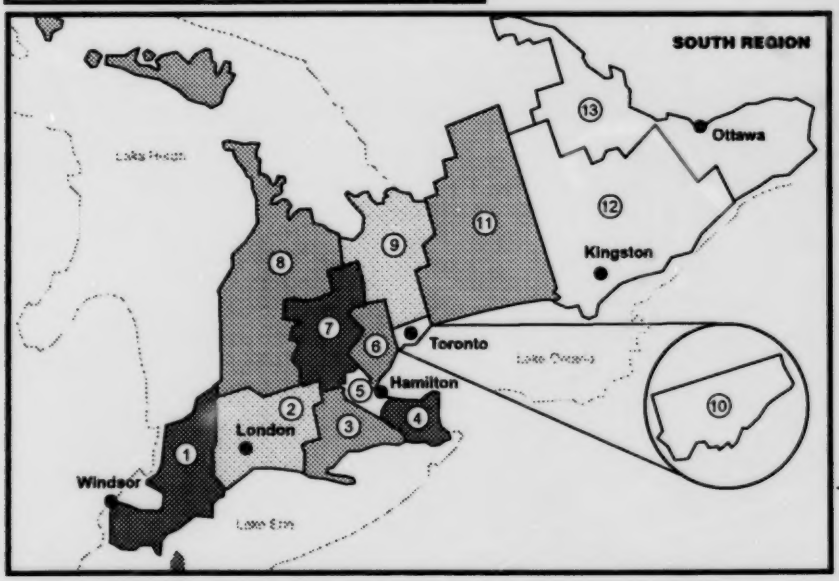
II. Provide Appropriate Education

Simply counting physicians or producing more of them will not solve Ontario's physician supply problems. As noted by Barer-Stoddart, McKendry, and Chan, the main cause of inequities in Ontario's health care system is the maldistribution of health resources - including the physician workforce. A tight physician supply only aggravates the long-standing challenge of providing health care services in chronically underserved areas, and allows the problem to creep into urban communities that, when doctors were more plentiful, had enough physician services.

The following maps, prepared by ICES, highlight the parts of the province that are undersupplied for physician services.

AREAS UNDERSUPPLIED FOR PHYSICIAN SERVICES





ONTARIO DISTRICT HEALTH COUNCILS

1. Essex, Kent and Lambton
2. Thames Valley
3. Grand River
4. Niagara Region
5. Hamilton-Wentworth
6. Halton-Peel
7. Waterloo Region – Wellington – Dufferin
8. Grey, Bruce, Huron, Perth
9. Simcoe-York
10. Toronto
11. Durham, Haliburton, Kawartha and Pine Ridge
12. Quinte, Kingston, Rideau
13. Champlain
14. Muskoka, Nipissing, Parry Sound and Timiskaming
15. Algoma, Cochrane, Manitoulin and Sudbury
16. Northwestern Ontario

DATA SOURCE; National Physician Database for fee-for-service physicians Ministry of Health, Canada Institute for Health Information and Association of Ontario Health Centres for non-fee-for-service physicians

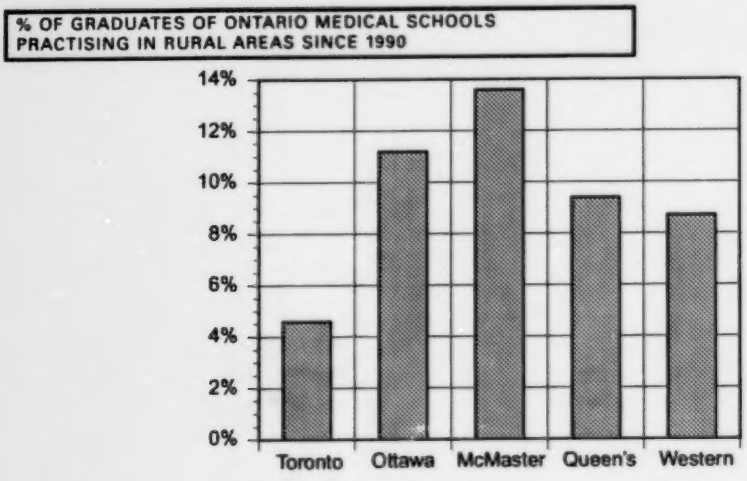
GENERAL & FAMILY PRACTITIONER SUPPLY PER 10,000 POPULATION

	GREATER THAN 8.5	(5)
	8.0 TO 8.49	(4)
	7.5 TO 7.99	(4)
	7.0 TO 7.49	(3)

Value in brackets is the number of DHCs in each category

Source of maps: Chan B. Atlas Reports: Use of Health Services. Report #1: Supply of Physicians Services in Ontario. Institute for Clinical Evaluative Sciences. November 1999.

The problem is that not enough physicians choose to work in rural or remote communities. The following chart illustrates the proportion of graduates from Ontario medical schools between 1990 and 1999 who chose rural or remote practice[16].



Why is the proportion so small?

THE ARGUMENT FOR DECENTRALIZING AND STREAMING MEDICAL EDUCATION

Based on a literature review and experience in other jurisdictions, the Expert Panel learned that rural physicians do not just happen, they have to be nurtured and developed. Physicians are more likely to choose to practice in rural, remote or underserviced areas when they[17]:

- grow up/complete high school in a small or rural community
- receive frequent, early exposure to rural, remote or underserviced practice in their undergraduate training
- have access to streamed medical education programs that ensure they develop the skills required for rural, remote or underserviced practice
- receive a significant portion of their postgraduate training in rural, remote or underserviced areas
- have rewarding practice opportunities/careers in rural settings
- have the support to lead a balanced life (e.g., critical mass of physicians and other health providers, working conditions, opportunities for continuing education).

How can Ontario use this knowledge to shape physician services to meet these needs? How can it develop physicians with the attitudes/skills required to work in rural, remote and underserviced areas?

16 *McKendry R. Physicians for Ontario. Too Many? Too Few? For 2000 and Beyond. Report of the Fact Finder on Physician Resources in Ontario. December 1999. Source for the data: Canadian Medical Association.*

17 *McKendry R. Ontario Physician Resources. Medical Education and Rural/Remote Practice Location. Abstracts of International Experience. Prepared for the Expert Panel on Health Professional Human Resources. April 4, 2000.*

The strategy of recruiting medical students to a rural stream and providing education in a rural setting has been used successfully in a number of other jurisdictions, including the United States, Australia, New Zealand, Norway and Japan. Ontario's preliminary efforts at providing a rural education stream – the postgraduate family medicine and generalist specialist programs organized through the University of Ottawa and McMaster University, and provided in Sudbury and Thunder Bay – have also been extremely effective. A recent study[18] indicated that 70% of graduates of the Family Medicine North program and the Northeastern Ontario Family Medicine program continue to practice in rural and remote settings.

In an attempt to build on this success and develop streamed training programs that will help shape rural physicians, the McKendry report recommended that the existing medical schools develop rural streams. At the same time, the Fact Finder also recommended that the ministry assess the feasibility of establishing a northern medical school that would not only provide a northern/rural stream but recruit students from rural settings and provide education in a northern/rural setting – thereby ensuring at least four of the critical success factors for producing rural physicians.

During its deliberations, the Expert Panel reviewed submissions for different options for providing rural medical education, including one for a northern medical school and one for a regional medical program, based in Windsor. While the submissions advocated different strategies, they all made it clear that physicians in practice in underserved areas – the northeast, northwest and southwest – are ready and willing to take a more active role in preparing physicians and other health care providers for rural and remote practice. As the ones who have chosen rural practice and who are dealing day-to-day with the shortage and inequity of physician services, they believe they can be an important part of solving the problem.

Driven by the imperative to distribute services more equitably, the Expert Panel believes that Ontario must change the way it selects medical students and educates physicians. The Expert Panel supports the need for training in rural settings and for rural training streams that can help shape physician services to meet needs. It believes the province must develop the capacity – in all regions of the province – to provide multidisciplinary education that prepares health professionals to work where they are needed. At issue is the most cost-effective and sustainable way for Ontario to achieve that goal.

A PLAN FOR INTEGRATED RURAL, NORTHERN AND UNDERSERVICED MEDICAL EDUCATION

The Expert Panel proposes a plan for an integrated, province-wide approach to rural, northern and underserviced medical education. The plan, which will require fundamental changes to the way medical education is delivered and organized, will involve:

- providing more opportunities for decentralized medical education at all stages of training in rural, northern and underserviced areas
- developing appropriate training streams and recruitment strategies
- ensuring quality.

18 *Pong R et al. Medical Training and Practice Locations: A Tale of Two Programs. Centre for Rural and Northern Health Research. Laurentian University. Northeastern Ontario Family Medicine Program. August 2000.*

DECENTRALIZE MEDICAL EDUCATION

Health needs can differ markedly from one community to another and, as noted earlier, can be influenced by socio-economic status, culture and geography. The health needs of a remote northern community will be different from the health needs of a small town in southwestern Ontario, which will be different from the health needs of a large, multicultural urban centre. At a more specific level, the needs of underserviced urban populations are distinct from those of underserviced rural populations. And the needs of an aboriginal community will be different from the needs of francophone or other cultural communities.

As McKendry stressed, Ontario's health care system must not just address geographic inequities, it must also address the inequities and unmet needs of certain populations, such as the urban poor and aboriginal people. It must be able to produce health professionals who are prepared to work in different settings, with different populations.

RURAL TRAINING INITIATIVES IN ONTARIO NOW

The Northeastern Ontario Family Medicine [NOFM] program and the Northeastern Elective Program [NEP] program at Laurentian University in Sudbury, linked with the University of Ottawa.

The Northwestern Ontario Medical Program [NOMP] and Family Medicine North program at Lakehead University, linked with McMaster University.

The Northern Academic Health Science Network (NAHSN), based out of Sudbury and Thunder Bay (established in May 1999).

The South Western Ontario Rural Medicine [SWORM] program, based in Goderich and linked with the University of Western Ontario.

Rural Ontario Medical Program (ROMP), based out of Collingwood, and linked with McMaster University.

Location of training is clearly a key factor in determining both the mix and distribution of physician services, and one that has not been used to its full potential in Ontario. At the current time, most of Ontario's medical education is provided at the province's five AHSCs, and focuses mainly on the type of care that can be provided in large urban tertiary care centres. While some of the medical schools have made an effort to provide some rural training opportunities (see box), only a relatively small number of medical students receive any significant exposure to rural practice in their six to 10 years of medical school – and most of that occurs late in the students' training. (Even fewer have any exposure to the health needs of underserviced populations, such as aboriginal people, the urban poor, or people with mental health and/or addictions problems.) This significantly reduces the chance that physicians will choose a career in rural medicine or underserviced areas. It also means that many may not be prepared – or may not have the confidence – to practice in communities that lack the resources of a tertiary care teaching hospital.

The Expert Panel believes that this must change. More education must occur in and with underserviced communities and populations, and physicians must be given the skills, opportunity and encouragement to pursue careers in those fields. Training programs must be developed in partnership with the communities and populations that need care.

Ontario is beginning to develop the critical mass of human resources and services to be able to offer high quality medical education in settings outside the five AHSCs. It has also started to invest in the technology to support decentralized training. However, it will take time for centres outside the AHSCs to develop the capacity to provide decentralized programs, and the process will require the support of the existing AHSCs.

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STRUCTURE

For these reasons, the Expert Panel proposes a staged approach to decentralizing medical education, beginning with the establishment of three clinical education campuses (CECs) in universities in geographically underserviced parts of the province: Thunder Bay, Sudbury and Windsor.

The goal of the clinical education campuses is to develop the capacity to deliver the full spectrum of medical education, from pre-clerkship through postgraduate training.

Initially, the CECs will be affiliated with an existing medical school, but will develop their own administrative structure. The head of each CEC will hold a dual appointment: director of the CEC in the local university and associate dean of rural or northern medicine at the sponsoring AHSC. Administratively, the director/associate dean will be responsible to his/her local university; academically he or she will be accountable to the Dean of Medicine/Health Sciences at the sponsoring AHSC. The responsibilities of all the partners (i.e., the local university, the sponsoring AHSC and the CEC), the nature of the affiliation, and the accountability required will be spelled out in an affiliation agreement.

To develop the capacity to provide comprehensive decentralized medical education, the CECs will have to recruit department heads and program heads, and develop effective working relationships with local health providers and facilities. These new academic opportunities in CECs will help attract skilled clinicians to underserviced areas of the province, which will not only increase the capacity to provide medical education in these regions, but increase the capacity to provide clinical services and to recruit local clinicians to act as preceptors.

Using this model, the CECs will be able to evolve beyond a branch office of the sponsoring medical school. Eventually, they will develop, on site, the capacity to plan, manage and deliver their own programs. This means that they will be able to evolve, over time, into free-standing medical schools, if that is what the health care system requires.

CO-ORDINATION

Rather than creating a new level of administration or bureaucracy to manage this larger academic network, the Expert Panel believes that the Council of Ontario Faculties of Medicine (COFM) should be responsible for co-ordinating Ontario's decentralized training and developing/implementing the integrated plan for rural, northern and underserviced medical education. To ensure that COFM reflects the views and wisdom of those delivering programs in rural and northern areas, the directors of the CECs should be members of COFM.

The integrated plan would not be limited to the development of CECs, but it would include the development of regional networks around the AHSCs that would promote decentralized learning opportunities and resource sharing in all parts of the province as well as other rural, northern and underserviced initiatives designed to shape physician services to meet local and regional needs.

TECHNOLOGY

Ontario's capacity to provide high quality decentralized medical education will depend on the effective use of technology-assisted learning. The CECs will be linked by computer and video to their sponsoring medical school, and will be able to share digital resources. Training programs will make effective use of tele-medicine and web-based learning. While this will be a cost-effective way to educate students, it will require some initial investment.

RESEARCH

The province's medical schools have extraordinary depth in health research[19], yet only a small proportion of that research activity is devoted to health services or population health research. While AHSCs will continue to pursue research that will improve our understanding of biology and the mechanisms of disease, the education system must also know more about the population its students will serve. To provide effective decentralized education, the CECs and the sponsoring AHSCs must understand the health needs of their communities. As part of their mandate, they should be responsible for developing knowledge on their populations' health status, the factors that create inequities, and innovative health interventions.

CLINICAL TEACHERS

The success of the CECs will depend on their ability to recruit clinical teachers. Although the new career opportunities within CECs may attract some skilled clinical teachers from other settings, the CECs will also have to find within their regions practising physicians who are willing and able to teach medical students and postgraduate trainees, and become more involved in research. Although physicians in underserviced areas have expressed an interest in being involved in teaching – particularly postgraduate trainees – this extra demand (for teaching and their own professional development) will increase their workload and may have a negative effect on the amount of clinical care they can provide. Given that these areas already have a shortage of family physicians and specialists, developing and maintaining a pool of skilled, effective clinical instructors may be difficult.

In fact, maintaining the academic medicine workforce is an issue in all parts of the province. Clinical teachers are often overextended, and the funding for their teaching activities (which is largely dependent on the ability of the AHSC to generate clinical income) has not kept pace with inflation rates over the past 30 years or with the increase in requirements for clinical education. As a result, many clinical teachers have chosen to give up their academic appointments (and the burdens of teaching and research) for private clinical practice. The same situation also exists in other professions, such as nursing.

To reverse this trend and make it easier for the CECs to attract and retain high quality clinical teachers, the health care system should make significant investments in developing and retaining clinical teachers, and ensure that they have adequate support and compensation for the vital role they play in teaching, research and clinical care.

19 *In 1998/99, Ontario's five AHSCs accounted for 43.4% ($468.6 million of $1,080.6 million) of the total research expenditures of Canada's 16 AHSCs. Source: Canadian Medical Education Statistics 2000. Association of Canadian Medical Colleges. Vol. 22.*

Recommendations

To increase the capacity to provide medical education in underserved parts of the province, the Expert Panel recommends that:

#3 **Ontario's medical schools build on existing relationships and infrastructure to create in Thunder Bay, Sudbury and Windsor university-based clinical education campuses (CECs) that have the capacity to deliver decentralized medical education.**

#4 **The Ontario Government, in collaboration with the federal government, provide:**

- **the funding to support the capital development and operating cost of three CECs, including the university and hospital/training site costs to provide decentralized medical education**
- **the initial investment required to develop the information technology infrastructure required to support decentralized medical education, including broad-band videoconferencing and telemedicine, with particular emphasis on rural and northern sites**
- **funding to develop, within the CECs, the capacity for research in health services and population health.**

#5 **The Directors of the CECs immediately become members of the Council of Ontario Faculties of Medicine (COFM), and COFM be responsible for co-ordinating the development of an integrated plan for rural, northern and underserviced medical education in Ontario.**

#6 **MOHLTC and the AHSCs take steps to address the issue of funding, support and incentives for clinical teachers in CECs and AHSCs.**

DEVELOP APPROPRIATE TRAINING STREAMS

Medical education, in addition to being delivered in all parts of the province, should be more targeted and focused on Ontario's health needs. One of the most effective ways to shape services to meet needs may be through the streaming of medical education. In a streamed program, medical students will be selected based on their interest in and suitability for a certain stream, and then given the type of exposure, skills and practical experience that will best prepare them to work in that field.

The Expert Panel believes that streaming is a critical tool in planning and managing physician resources. However, the Panel also recognizes the need for flexibility. Training streams must be broad and flexible enough to keep trainees from being tied to a single career path, and to allow students to pursue any residency or career training stream.

For purposes of this report, the Expert Panel looked at the potential for three types of streams: rural and/or northern medicine, underserviced populations and clinical scholars.

UNDERSERVICED AREAS: RURAL AND NORTHERN EDUCATION STREAMS

Focus

The CECs will be responsible for delivering a dedicated rural and/or northern stream that will prepare medical students for practice in those settings. In addition, the existing medical schools can choose to develop and deliver a rural stream, if they believe that is part of their mission.

While the streams will be focused enough to give medical students the unique skills required for rural or northern practice, they should be comprehensive and flexible enough that students in these streams will:

- have full exposure to different facets of academic and clinical medicine
- be able to apply to any other (non rural/northern) residency program
- have some flexibility to switch streams
- have some exposure to multidisciplinary approaches to care.

Expectations

MOHLTC and the Ministry of Training, Colleges and Universities (MTCU) have traditionally funded the province's medical schools to provide medical education. The decision about the content or focus of that education – or where it is provided – has generally been left to the medical schools, and is usually based on each school's mission and expertise.

In the move to develop rural and northern streams, the Expert Panel believes that the government should be more directive. To ensure that the CECs will have the critical mass of medical students required to mount a high quality education program, the government should work with medical schools to allocate a certain proportion of undergraduate medicine positions and postgraduate positions specifically to the CECs for rural and/or northern training, and contract with the CEC and the sponsoring AHSC to provide that training stream.

The Expert Panel believes it is extremely important for the government to be clear about what it expects from the rural and/or northern medicine streams (i.e., physicians will receive a certain proportion of their training in rural settings, the training will focus on certain skills, a certain proportion of training will be multidisciplinary[20]) and to hold the medical education system accountable for developing and delivering that program. The roles and responsibilities of all stakeholders (i.e., the local university, the sponsoring medical school, the CEC and the ministry), the number of positions, the funding to be provided, the expectations, and the relationship among the partners should all be set out in a contract. The contract should make it explicit that the funding is specifically for positions in rural and northern medicine. The initial contract should be for a long enough period of time (i.e., minimum of four years) to be able to monitor program results. Based on those results, the government will be able to renew, modify or withdraw the funding (and the positions) if the school is not able to develop or deliver a rural and/or northern stream. Over time, the funding for the positions can also evolve into base funding flowed directly to the CECs.

20 *Lakehead University already has a successful multidisciplinary approach to educating physicians, nurse practitioners and nurses – a model that could be adapted and expanded in a rural or northern training stream.*

Recruitment Strategies

The success of rural and northern training will depend, to a great extent, on the programs' ability to attract and recruit students who will make good rural/northern physicians. Every effort must be made to recruit students from rural and northern settings, and to identify the urban students who are likely to thrive in those practice settings. The admissions process and criteria for entry into the rural or northern stream should reflect the best available evidence on the profile of physicians who succeed in rural or northern practice, and will likely include factors such as location of residence, location of secondary schooling, and commitment to rural or northern practice. While the rural/northern programs will have a separate admissions process, every effort must be made to ensure that it does not compromise the quality of the students accepted, or create a second tier mentality.

At the current time, Ontario's medical schools receive a disproportionately small number of applications from students in rural/northern areas, so efforts must be made to promote careers in medicine and other health professions to students when they are in high school. Programs that send speakers into secondary schools to talk about medical careers and use other strategies to recruit high school students can be extremely effective. The University of Ottawa has already demonstrated the effectiveness of aggressive and targeted early awareness/recruitment strategies in its francophone health programs.

In an attempt to address physician shortages, some underserviced regions have developed innovative recruitment and support models that target local students. For example, Brock University in Niagara Region (which is underserviced for physicians), actively promotes and recruits high school students to its Med Plus program, an enriched program that gives undergraduate students tours of health facilities, mentors, volunteer opportunities in health care settings, and career advice. Med Plus helps prepare students who are applying to medical school or other health-related graduate programs. It also helps them make contacts and establish relationships within the Niagara medical community that may motivate the students to return to Niagara to practice.

Nursing organizations, such as the Registered Nurses Association of Ontario (RNAO) and the Registered Practical Nurses Association of Ontario (RPNAO), have developed similar types of outreach programs for high school and university students.

Staging

The proposals for decentralized education reviewed by the Expert Panel indicated that it could take as long as four years for new sites to develop the program components required for undergraduate medical education. However, both northwestern and northeastern Ontario have already developed some capacity to provide undergraduate and postgraduate training, through programs such as NOMP, Family Medicine North, NEP and NOFM.

To develop physicians for rural and northern practice as quickly as possible, the Expert Panel proposes to capitalize both on the capacity of the existing medical schools and on the partnerships and programs already in place in underserviced areas. In this model, CECs would develop their programs at the postgraduate level first and, over a period of four years, develop their capacity to provide undergraduate medical education. In the meantime, undergraduates with an interest in rural or northern medicine would be recruited into a rural/northern stream based in the sponsoring university. Once the CECs have developed their undergraduate programs, existing students would be transferred to the CECs and new students would be admitted directly into programs at the CECs.

The timing and sequence would be as follows:

- in 2002, add a small number of postgraduate training positions (i.e., 25) in the generalist specialties
- in 2003, offer a rural or northern clerkship experience for undergraduates
- in 2004, admit pre-clerkship students directly to the CEC and the rural or northern stream.

While this strategy will produce rural and northern-trained physicians more quickly, the Expert Panel notes that any immediate increase in postgraduate positions may lead to criticism from the other provinces and territories. At the current time, Ontario participates in a national strategy which ensures that, on a national level, the number of postgraduate positions is equal to the size of the national undergraduate class (excluding Quebec). This guarantees that there are postgraduate places for all Canadian medical school graduates. By adding postgraduate positions, Ontario may disrupt that balance, and the new positions will likely attract students who would have filled postgraduate positions in other provinces. This could have a negative effect on the other provinces' training programs and their future physician supply. However, several other provinces (e.g., Alberta, British Columbia) have recently increased their post graduate training spots. It is clear that other provinces are facing the same pressures as Ontario, and have taken actions similar to those the Expert Panel is proposing.

To mitigate the negative effect of the increase in postgraduate positions on the Canadian undergraduate class, MOHLTC could consider opening the 25 positions to Canadians who did their undergraduate training abroad and want to return to Canada for their postgraduate training.

UNDERSERVICED POPULATIONS: ABORIGINAL AND URBAN POOR STREAMS

Not all Ontario's physician supply problems are geographic. Across the province, there are certain populations that are chronically underserved, including Aboriginal people, some other cultural groups, people in long-term care facilities, the urban poor and homeless, people with mental health problems, people with addictions, and people with blood-borne infections.

In some cases, the underservicing is driven by inequities in physician compensation. Patients with addictions, mental health problems or blood-borne infections tend to be time-consuming to treat, and the current compensation system does not recognize that. However, some of the underservicing is also due to the fact that the medical training system does not necessarily recruit or prepare physicians to care for these populations.

Ontario's medical schools should help address these inequities and shape services to meet these needs by developing targeted training streams. The existing medical schools and the CECs could identify, as part of their mission, their role in meeting the health needs of certain populations. For example, the northwestern CEC could identify a strong role in aboriginal health, while the University of Toronto medical school could identify a need in its community for services for the urban poor. In each case, the school or campus would develop a targeted training stream. Like the proposed rural/northern stream, students who enter these streams would still have full exposure to different facets of academic and clinical medicine, and be able to apply to any other residency program. And, like the students in the rural/northern stream, they would be admitted based on factors that would make them effective in this type of practice and be given training that would focus on the needs of that particular population. Given the significant role that other professions, such as nursing, play in providing care for underserviced populations (e.g., a significant amount of the care provided to aboriginal communities is through nursing stations, many programs that serve the homeless are nursing-based outreach services), these training streams should focus on developing effective multidisciplinary teams.

CLINICAL SCHOLARS, ACADEMICS AND RESEARCHERS

The existing AHSCs have developed special training opportunities for clinical scholars and researchers, and the same approach could be used within the CECs. In this program, the CECs would offer scholars who have completed specialty training, a developed practice environment and a significant proportion of protected time to teach or do research in pursuit of a non-clinical degree, such as an MEd, MSc or MHA. The program would target northern/rural physicians who are interested in developing academic or research skills or careers.

This training stream would have significant benefits for the CECs, the scholars and the quality of care in the underserviced region. While the scholars would have the opportunity to pursue their career goals, the CECs would be able to increase their capacity and depth in education, research and organization - and, at the same time, increase the number of practising physicians in the region.

Recommendations

To develop the capacity to provide the type of training physicians will need to meet health needs, the Expert Panel recommends that:

#7 The CECs work with their training sites, communities and the sponsoring universities to develop rural and/or northern medical education streams, including a separate or enhanced admission process based on factors that are most likely to identify students who will choose rural or northern practice.

#8 Ontario's medical schools and CECs work with other health disciplines to identify underserved populations for which they have a responsibility, and develop multidisciplinary streamed training programs designed to meet their health service needs.

#9 Ontario's medical schools and CECs assess the potential for a training stream for clinical scholars, based in rural and northern environments.

#10 HHRAP evaluate the effectiveness of the CECs and sponsoring universities in implementing targeted training streams, and advise MOHLTC on future investments in training for rural and northern medicine, underserviced populations and clinical scholars.

ENSURE QUALITY

The quality of health care delivery is critically dependent on the professions' pursuit of lifelong learning and on evidence-based practice (i.e., the ability to apply evidence to decision making). The explosion in medical knowledge is making it increasingly difficult for individuals to remain current or to critically assess the evidence.

Quality is inextricably linked with appropriateness of care. With high quality appropriate care, patients receive services that provide some tangible benefit. Inappropriate care, on the other hand, is a waste of public resources and creates an unnecessary burden on physician services. A responsible approach to physician workforce planning must include strategies to measure and increase the appropriateness of care.

In a more decentralized system of medical education, with targeted training streams, the issues of quality control and appropriateness of care become even more important. Ontario has a reputation for preparing physicians who are second to none in the world. To safeguard that reputation and ensure the appropriateness of both medical education and medical care, Ontario must take steps to ensure quality, regardless of where education is provided or its focus, and to invest in education and professional development. The Expert Panel proposes three strategies to improve the medical education system's capacity to provide high quality, appropriate care: education masters, common curriculum resources and evaluation tools.

EDUCATION MASTERS

Ontario should develop a cadre of medical education masters or specialists whose role within the AHSC or CEC would be to:

- conduct research in education, evaluation and professional development
- encourage innovation in professional development
- ensure that learning is an integral part of the practice of medicine and other health disciplines.

Education masters would identify the types of learning materials required to support continuous learning, and develop unique, distinctive education resources for all Ontario students and preceptors. A resource to clinical teachers, they would help the medical schools develop clinical education programs for physicians at all stages of professional development. Based on the academic programs in place now and those proposed for the CECs, education masters would be distributed as follows:

AHSC/CEC	# of Education Masters
Lakehead University	2
Laurentian University	2
University of Windsor	2
University of Ottawa	4
Queen's University	3
University of Western Ontario	4
McMaster University	4
University of Toronto	7
Total	**28**

COMMON CURRICULUM/RESOURCES

The five Ontario faculties of medicine, together with the Northern Academic Health Sciences Network (NAHSN), have begun to explore the feasibility of a common core Ontario curriculum and common educational resources. This approach would ensure that all medical students, teachers and practising physicians in Ontario, regardless of where they are trained or practice, would have:

- access to the same high quality, up-to-date information and resources – in the form of modules that would include objectives, cases, question banks and evaluation tools
- the opportunity to use those resources to develop innovative approaches to medical education that will meet the needs of the population they serve

- different means to pursue and attain required continuing medical education.

Although all education sites will benefit from cost-effective common resources, the CECs will have the added advantage of not having to develop their own resources and being able to adapt common resources to meet their education needs. For example, common resources developed in Ontario for the aboriginal health training stream, could be combined with resources designed by other jurisdictions and resources on the role of spirituality in healing in the Aboriginal culture, to help build the program. This means new training streams can be up and running much more quickly.

Common resources will also enable students registered at any Ontario training site to develop an individualized training path and train as rural physicians, specialists or academics, and to pursue unique paths to a PhD, MBA or MPH degrees, even if the diploma is offered by another institution.

The common resources developed for medicine can also be shared with other health disciplines, giving them the same access to high quality information and resources.

In addition to the common curriculum, McMaster University has developed the basis for a digital health library for Ontario, which would give providers across the province easy access to clinical guidelines that synthesize all available evidence as well as annotated and systematic reviews of the literature.

EVALUATION TOOLS

While the education system must develop better ways to teach, it must also develop effective ways to assess the knowledge and practice skills of physicians, and ensure they stay current with new knowledge and continue to provide appropriate care. Using a number of different datasets, it is possible to develop comprehensive information on the quality and appropriateness of physician practice (based on practice profiles, prescription profiles and regional differences) that could be used to identify any need for continuing education or teaching resources.

To support and assist practising physicians, the training system should ensure that regular evaluation is an integral part of ongoing professional development.

To ensure the quality and appropriateness of medical education and practice, and help shape skills and services to meet needs, the Expert Panel recommends that:

#11 MOHLTC provide the funding to support 28 medical education specialists, distributed among the AHSCs and CECs, responsible for:

- **conducting research in education and professional development**
- **developing educational resources for students and preceptors**
- **improving the quality of medical education in the province.**

#12 Government increase its investment in continuing medical education, and provide funding to support the development of:

- **common educational resources**
- **the digital health library**
- **evaluation tools that can be used to assess the quality/appropriateness of care and guide medical education.**

III. Produce the Right Supply and Mix of Physician Services

The decentralizing and streaming of medical education have the potential to improve physician distribution, but they do not deal directly with the issue of appropriate supply. How many physicians does Ontario need? How many physicians will we need in five to 10 years?

To answer those questions, the province will need increasingly sophisticated planning tools that can take into account the complex factors that affect both the population's need for services and physician supply, mix and distribution (see box).

To improve Ontario's capacity to shape the supply and mix of physician services to meet needs, the Expert Panel proposes a needs-based approach for planning physician services as well as strategies to improve health human resources planning.

FACTORS AFFECTING PLANNING FOR PHYSICIAN SERVICES

The population's need for health services will be affected by many factors, including:

- population growth
- geography
- the education and literacy of the population
- the population's employment opportunities/income
- the aging of the population, and the impact on the demand for health services
- the increase in life expectancy, and the impact on health services
- the increasing sophistication of consumers, who have more access to information, and changing expectations of the health system
- medical and technological advances, new drugs and treatments which may either increase or decrease the need for care.

The effective supply, mix and distribution of physician services will be determined by many factors, including:

- the number of physicians in practice
- the number and distribution of other health professionals
- the range of services they provide
- the impact of age and gender
- spousal and family needs
- workload levels
- their education (including CME)
- migration patterns
- employment opportunities/incentives
- the working environment.

DEVELOPING DATA MODELS FOR PLANNING PHYSICIAN SERVICES

The Expert Panel believes that the number, mix and distribution of physician services in Ontario should be needs-based. However, Ontario does not yet have a reliable, consistent way to measure or predict health needs. In his report, Dr. McKendry recommended piloting access modelling for "core services in medical fields where consumers appear to have ongoing problems getting timely care," including family medicine.

The Expert Panel has taken the first steps in exploring the potential of an access modelling methodology designed to predict the number of specialists needed in future years, based on measuring the demand for services in the past, estimating a reasonable level of access to services in the future (as a proxy for future need), and making assumptions about how services will be delivered. The Panel has also used a slightly modified approach to estimate the number of family physicians required, by looking at how many people have used family physicians in the past, estimating the number of people who will have a regular family physician in the future, and making some assumptions about how primary care will be delivered.

BRIEF SNAPSHOT OF EXPERT PANEL ACCESS MODELLING

The Expert Panel identified "sentinel services" for six specialty services highlighted by Dr. McKendry as being in short supply: anesthesiology, general surgery, obstetrics, ophthalmology, orthopedics, and psychiatry. A sentinel service is one that represents a significant proportion of the workload for the specialty, and is determined by true patient need and not likely to be heavily influenced by physician discretion (e.g., hip or knee replacements in orthopedics, deliveries in obstetrics, cholecystectomies and mastectomies in general surgery, and cataract surgery in opthalmology).

The Expert Panel looked at the current age/sex adjusted rate of sentinel services and then predicted, based on the projected growth and aging of the population, the rate or amount of sentinel services that would be required each year over the next 10 years. (With the aging of the population, the need for some services, such as hip and knee replacements will increase while the need for others, such as deliveries, will decline.) The Panel also looked at workload (i.e., the amount of sentinel service a full-time physician can reasonably provide in a year) and, from that, calculated the supply of services that will be available given the current workforce (this takes into account new physicians who will enter practice as well as retirements). From that, the Panel was able to estimate the number of physicians required in each of the specialties to meet needs over the next 10 years. It also used a similar approach to estimate the need for total physicians.

Sentinel services	=	essential services the population needs
Need for services	=	services/person x population (adjusted for age/sex)
Services available	=	services/specialist (workload) x # of specialists
# of doctors needed	=	need for services – services available / workload

Because a procedure-based approach would not capture the supportive, ongoing patient/provider relationship that is an integral part of primary care, the Expert Panel used a slightly different methodology to estimate the need for family physicians. That method was based on assigning patients who receive at least 50% of their care from one physician to that physician's caseload, determining the proportion of the population that uses a regular family physician, establishing a reasonable caseload size for family physicians, and estimating the proportion of the population that will need a regular family physician as the population grows.

In an attempt to capture some of the complex factors that affect physician workforce planning, the Expert Panel also examined workload levels to determine whether they were reasonable, estimated the contribution of other professionals who can provide these services (e.g., GP-anesthesiologists, GP-obstetricians, midwives, nurse practitioners), and assessed the potential impact that new technology could have on workload.

LIMITATIONS OF THE MODELLING

The main limitation of the Expert Panel's data modelling approach is that it is utilization-based. It reflects what has happened in the past – which may or may not reflect an appropriate level of service – and it makes no attempt to assess the quality or efficacy of the services provided. This means that the total number of sentinel services[21] delivered in a year may simultaneously include:

- appropriate care to meet health needs
- inappropriate and unnecessary care
- not enough care to meet the current needs of underserviced populations.

The model also has some limitations in its ability to determine the supply of physicians required to provide a certain level of service. The approach used to estimate the number of physicians required is based on a number of assumptions, including:

- the current level of service that physicians are providing is appropriate

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21 *Sentinel services are those that represent a significant proportion of the workload for the specialty, and are determined by true patient need and not likely to be heavily influenced by physician discretion (e.g., hip or knee replacements in orthopedics, deliveries in obstetrics, cholecystectomies and mastectomies in general surgery, and cataract surgery in opthalmology).*

- non-fee-for-service physicians are providing the sentinel service at the same rate as fee-for-service physicians, and the requirement for non-fee-for-service physicians is assumed to increase at the same rate as for fee-for-service physicians within the same specialty. In those specialties where all physicians are non-fee-for-service, the Expert Panel assumed that the requirement for those physicians would increase at the same rate as all fee-for-service physicians combined (i.e., the number is not specialty specific and does not reflect any anomalies that may exist within that specialty).
- there will be no significant changes in physician practice patterns. This is an important assumption because any changes in the way physicians practice could have a significant impact on the number of physicians required, and must be monitored closely.

Despite these limitations, the Expert Panel believes the proposed access modelling method is a useful planning tool that should be evaluated and refined over time. It appears to provide a means to identify and project the demand for procedure-based services, and the system's ability to provide that level of service. It is less useful in specialties, such as psychiatry, that are consultation-based – in large part because it is difficult to define consultation services or to determine what proportion are driven by true patient need, patient expectations, or provider practice patterns.

While the model has potential, its results at this stage in its development should be interpreted with caution. Planners must keep in mind that the model is capturing inappropriate service and underservicing, as well as appropriate levels of service. Planners should also be aware that perceived shortages in the supply of particular services may be due to factors other than the number of physicians, such as: lack of operating rooms, lack of support personnel, or inappropriate incentives that encourage physicians to devote a disproportionate amount of their time to providing non-sentinel services. If services were organized differently, the system might be able to increase its capacity to provide essential/sentinel services with existing resources or with only a modest increase in physician numbers. All these factors must be taken into account when using the model to help shape services to meet needs.

FINDINGS

Because of time constraints, the Expert Panel was only able to apply the model in depth to six of the specialties identified by Dr. McKendry as in serious short supply: anesthesiology, general surgery, obstetrics/gynecology, ophthalmology, orthopedics and psychiatry. For those specialties (except psychiatry), the Expert Panel ran the model looking at both consultations and certain specific sentinel services (see Appendix 3). For psychiatry and for the other specialties listed in the Ontario Physician Workforce Database, the Expert Panel ran the model based on consultations only. As noted in the box on page 49, the Panel used a caseload measure to calculate the future requirement for family physicians.

General Trends

The modelling exercise identified the following general trends, which should be taken into account in future physician service planning.

- **Demand for Services.** The age-sex adjusted rate for sentinel services remained constant for anesthesia for surgical procedure (<1% over five years) but rose significantly for anesthesiology consults (>9%/year)[22] . The age-sex adjusted rate for sentinel services declined slightly for general surgery and obstetrics/gynecology (<1%/year), and increased for ophthalmology (>5%/year for cataract and retinal procedures) and for orthopedics (>1%/year for all procedures; >5%/year for knee replacements and >2.5% for hip replacements).

- **Consultation Rates.** The consultation rate for all specialties dropped by 10% in 1998/99. This may have been the result of stricter OHIP criteria for a consult. The consultation rate was stable from 1995/96 to 1997/98, and from 1998/99 to 1999/2000, so it appears that the demand for consultations has remained relatively constant.

- **Workload.** The average workload per physician remained relatively steady between 1995 and 1999 (i.e., it has increased by only 1% over the past five years). However, during this time, the number of female physicians has increased and the average workload for female physicians is 20% lower than that of males. This means that workload has increased for both female and male physicians, but lifestyle decisions (e.g., working fewer hours, having a more balanced life) have resulted in a near-steady workload state.

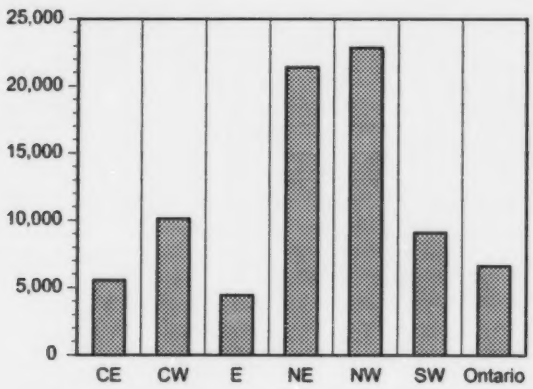
- **Migration.** The 1990s were a turbulent time in physician-government relations. Faced with acute fiscal pressures, government initiated policies such as clawbacks, restrictions on billing numbers and discounts for new entrants in selected urban areas. As a result, net physician migration out of Ontario reached historic highs during the mid 1990s.

- **Retirements.** Retirement rates (age-sex adjusted) have been generally stable in Ontario, except in 1995 when the rate doubled. This was likely due to the same factors that adversely affected migration. Retirement rates have been generally lower in Ontario than in other provinces, which offered retirement buyout plans in recent years.

22 *Much of the increase in anesthesiology consults may be due to pain consultations. However, consults still represent < 5% of anesthesiologists' workload.*

- **Contribution of Other Providers.** Some services are provided by more than one type of provider, including: obstetrics (obstetrician/gynecologists, GP/FPs, and midwives) and anesthesiology (anesthesiologists, GP-anesthesiologists).
- **Comprehensiveness of Practice/Proportion of Generalists to Specialists.** The proportion of FP/GPs contributing to specialized care is dropping. The ratio of anesthesiologists to GP-anesthesiologists has been rising, from 77:23 in 1995/96 to 80:20 in 1999/2000. The ratio of obstetricians to GPs doing obstetrics has been rising, from 26:74 in 1995/96 to 31:69 in 1999/2000. This trend has serious implications for smaller communities that do not have the volumes to support a specialist and rely on FP/GPs to provide these services.
- About 197 midwives are licensed to practice in Ontario,[23] and approximately 40 more enter practice each year in Ontario. Although the typical caseload for each midwife is 40 deliveries per year, a significant proportion of deliveries (25% to 30%) involve shared care with an obstetrician/gynecologist.
- Nurse practitioners working collaboratively with a family physician can allow primary care practices to increase their caseload by 33% (with a reported range of 25% to 50%).[24] To date, over 300 nurse practitioners have graduated from Ontario's Primary Health Care Nurse Practitioner Training Program and they work in a variety of health care settings. Over the next three years, the program expects to graduate about 100 more each year.[25]

POPULATION PER PHYSICIAN RATIO BY HEALTH PLANNING REGION FOR PSYCHIATRY (1999)



DISTRIBUTION ISSUES

The actual number of physicians and the amount of service they are able to provide is only one part of the picture. The analysis must also take into account the distribution of physicians across the province, as well as the issue of critical mass. As this chart illustrates, the supply of some specialties (in this case, psychiatry) varies significantly in different regions of the province.

23 *About 176 midwives were in active practice at the end of 2000.*

24 *Expert Panel on Health Professional Human Resources. Working Group on Data and Modelling. Improving Access to Primary Care Services: Opportunities for Collaborative Physician/NP Practice. A summary of research undertaken with NPs and physicians. October 2000.*

25 *Although the program admits 75 students each year, a large proportion are part-time students who take several years to complete the course requirements. That is why more than 75 will graduate each year for the next few years.*

Some communities will also face the issue of critical mass. For example, they may not need four family physicians to manage the size of the local caseload, but they may need at least five physicians to make the total workload (i.e., on call, hospital coverage) tolerable for the physician group. If they do not have the critical mass to make the job attractive, these communities risk burning out or losing the physicians who are there now.

PREDICTING THE FUTURE

As noted earlier, the population's need for health services and the supply of physicians can be influenced by many factors, from age to technology to practice patterns to broad health and fiscal policies. To estimate the number of physicians Ontario will need between 2000 and 2010, the Expert Panel developed three possible scenarios, each based on slightly different assumptions:

- Scenario 1 assumes that the existing age/sex adjusted demand for care will remain constant (i.e., status quo level of health care utilization). The requirement for physicians will be driven primarily by the growth and aging of the population. Physician workload will drop slightly to reflect the higher proportion of women and older physicians in the workforce.[26]

- Scenario 2 assumes that the age/sex adjusted demand for most sentinel services will remain constant, but there will be some growth is the age/sex adjusted demand for selected services in ophthalmology, orthopedics and anesthesiology. Workload will decrease slightly to reflect the higher proportion of women and older physicians in the workforce, and to reflect all physicians' desire to lead more balanced lives. Nurse practitioners will be integrated into collaborative primary care practices with family physicians.

- Scenario 3 makes the same assumptions as Scenario 2 but, in addition, it assumes that the health system will introduce policies designed to: make effective use of other health resources, such as nurse practitioners and midwives; encourage family physicians to provide obstetrical and anesthesiology services; adjust the mix between general internists and medical subspecialists to reflect the needs of smaller communities; and reduce inappropriate patient demand for care.

See the following table for a summary of the detailed assumptions for each scenario.

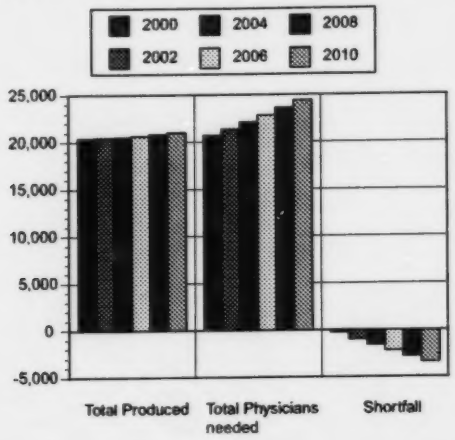
26 *Both these groups are more likely than other physicians to work part-time.*

Assumptions	Scenario 1: Status Quo	Scenario 2: Increase in Demand for Services/ Decrease in Workload	Scenario 3: Increase in Demand for Services/ Decrease in Workload/ Policy Interventions
Demand for physician services	Increase in demand from population growth/aging; no increase in age/sex adjusted sentinel event rate	Increase in demand from population growth/aging; age/sex adjusted sentinel event rate stable in most specialties; slight growth in demand for anesthesia consults, hip/knee replacements and cataract/retinal surgery (1%/year)	Same as scenario 2
Physician workload	Age/sex adjusted workload will remain constant; decrease in overall physician workload due to aging of physician pool and increase in % of female physicians	Will gradually drop by 0.5% physicians /year to account for the increasing number of women and older physicians (0.3%), and for the desire by most physicians for more balanced lives (0.2%); workload in orthopedics and opthalmology will increase slightly (i.e., 0.5%/year) due to impact of new technologies	Same as scenario 2
Physician supply	Will reflect past five-year trends, including historically high levels of migration and anomalous increase in retirements in 1995, reflects the 10% decline in enrolment(1993) and the increase in 2000 (i.e., 33 from McKendry report, 40 from Expert Panel interim recommendations)	Will reflect the past five-year trends except that, given the improved fiscal climate, physician migration will decline and retirement rate calculation will exclude the 1995 year; includes the 10% decline in medical enrolment (1993), and the increase in 2000 (i.e., 33 from McKendry report, 40 from Expert Panel interim recommendations); by 2010 the ratio of internal medicine to subspecialist medicine will revert to 1995 levels (i.e., 1%/year increase in internal medicine and .2%/year decrease in subspecialty medicine).	Same as scenario 2

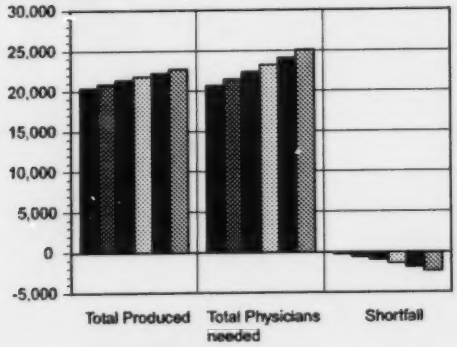
Assumptions	Scenario 1: Status Quo	Scenario 2: Increase in Demand for Services/ Decrease in Workload	Scenario 3: Increase in Demand for Services/ Decrease in Workload/ Policy Interventions
Comprehensiveness of Practice/Proportion of generalists to specialists (e.g., obstetrics, anesthesiology)	Continue to decline at the same rate as the past five years	Will remain constant (i.e., 80:20 anesthesiologists to GP-anesthesiologists; 31:69 obstetricians to GP/FPs doing obstetrics)	Incentives will be offered to restore the ratios of anesthesiologists to GP-anesthesiologists and obstetricians to GP/FPs doing obstetrics to1995 levels by 2010.
Use of other providers	No use of nurse practitioners; midwives will handle 28 deliveries per year without assistance and 12 with assistance; the assisted deliveries will be counted as part of the obstetrics/ gynecology workload	Over the next 10 years, about 75[27] nurse practitioners will be integrated into primary care each year, allowing GPs working with nurse practitioners to increase caseload by 33%; midwives will continue to be introduced at the current rate and their workload will remain at the current level (see Scenario 1)	Maximum use of nurse practitioners, which will allow GPs working with NPs to increase their caseload by 50%; number of NPs graduating from training programs annually will double (from 100 to 200/year, with from 75 to 150/year going into primary care) beginning in 2006; a modest improvement in the number of 'referral-free' deliveries among midwives (i.e., from 28/40 to 30/40); a modest patient demand management program will encourage patients to make more appropriate use of health resources and allow family physicians to increase their caseload by 0.5%/year

27 *Each year over the next three to five years, about 100 nurse practitioners will graduate from Ontario's training programs. The number "75" is based on the assumption that not all of them will choose to work in primary care/physician practices. Some will be employed in long-term care settings, emergency departments, home care and other settings.*

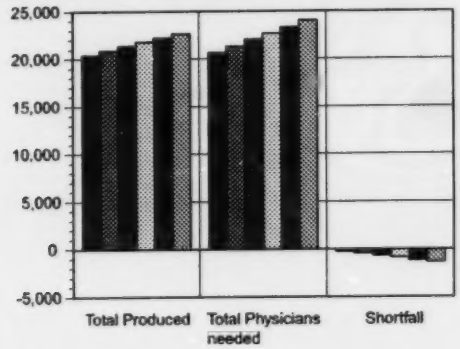
SCENARIO 1: STATUS QUO



SCENARIO 2: INCREASE IN SENTINEL SERVICES/DECREASE IN WORKLOAD



SCENARIO 3: INCREASE IN SENTINELSERVICES/DECREASE IN WORKLOAD/AGGRESSIVE POLICY INTERVENTIONS



DATA RESULTS

HOW MANY PHYSICIANS WILL ONTARIO NEED?

As these graphs illustrate, the number of physicians Ontario will have, the number it will need and the shortfall varies significantly, depending on the scenario and assumptions used. Ontario's shortfall in physicians in the year 2000 ranges from 274, based on the status quo, to 236, based on a predicted increase in demand, decrease in workload, lower physician migration and the strategic use of other health policies. By 2010, the gap is much greater: 3,356 with the status quo; 2,374 with the increase in demand and decrease in workload but no other supportive policies; and 1,367 with strategic use of health policies.

WHAT TYPES OF PHYSICIANS WILL ONTARIO NEED?

In its data modelling exercises, the Expert Panel focused primarily on six specialties identified in the McKendry report. For a more detailed breakdown of assumptions, physician numbers and shortfalls by the six specialties analyzed, see Appendix 3. At this stage in the model's development, it is difficult to make conclusive judgements about the number of physicians that will be required in each specialty. More work must be done to develop micro models for each specialty.

WHAT IS ONTARIO'S CAPACITY TO MEET PRIORITY HEALTH NEEDS?

During the Panel's deliberations, MOHLTC identified some priority health areas that must be adequately resourced over the next 10 years, including cardiac care, cancer care, geriatrics and public health. In most cases, these priorities are the result of demographics.

While the Expert Panel model takes into account the increased demand for hip and knee replacements related to aging, the Expert Panel was not able within its timeframe to specifically address the other priorities. However, the Expert Panel did review several reports identifying the human resource requirements and issues associated with some other high priority areas, including cardiac care, systemic therapy (cancer) services and specialized geriatric services, and believes the needs in these specialities should be analyzed in more depth. The submissions identified significant increases in demand for services and potential current and future human resources shortages that should be studied.

Cardiac Care. Early in 2000, the Cardiac Care Network (CCN) convened a Consensus Panel on Cardiovascular Human Resources to plan for the health human resources required to provide adult cardiac care and to respond to the Fact Finder's conclusions, which the CCN felt were at odds with its perspective on the need for cardiologists and cardiac surgeons. Its report was submitted to the Expert Panel in June[28]. Although the CCN Consensus Panel did not make specific recommendations about the number of professionals required to meet adult cardiac care needs, it did survey cardiac care providers to assess current and future needs. The Consensus Panel noted that, because of a general lack of data on cardiac care professionals and uncertainty about the variables affecting need and supply, it was difficult to develop detailed long-term projections. However, key indicators (e.g., long waits for consultations and procedures, increasing professional workloads, procedure cancellations, intense on-call schedules particularly in rural and northern areas, high migration levels of younger physicians) highlight a potential problem in access to services.

As tertiary cardiac services are one of the few areas in the health delivery system with publicly accepted benchmarks for procedures such as by-pass surgery and catheterizations, the need for physician specialties in cardiac care would lend itself to future iterations of the access modelling approach.

28 *Cardiac Care Network of Ontario. A Discussion Paper by the Consensus Panel on Cardiovascular Human Resources in Ontario. Final Report and Recommendations. Submitted to the Ontario Ministry of Health and Long-Term Care. June 2000.*

Cancer Care. The Expert Panel received several reports from organizations representing pediatric oncologists, medical oncologists, radiation oncologists and providers of systemic therapy. The report of the Systemic Therapy Task Force[29], which the Expert Panel analyzed, outlined a methodology and workload standard that identified the immediate need for an additional 12 medical oncologists. While the Task Force's approach varied from that of the Expert Panel, it could be adapted to the access modelling methodology in the future. One critical consideration in this analysis is a reasonable future workload for medical oncologists.

Geriatrics. As the population of Ontario continues to age, the province will need physicians with special skills and training in caring for the elderly. A report of the Regional Geriatric Programs of Ontario[30] prepared in the spring of 2000 identifies a current shortfall in the supply of geriatricians, as well as a problem retaining new geriatricians who graduate from training programs in Ontario. While this particular specialty, which is predominantly paid on a non-fee-for-service basis, would create some challenges for the access modelling approach, special attention should be given to assessing the supply and distribution of geriatricians as well as primary care providers with special skills in geriatrics.

Public Health. Although the Expert Panel received only one formal submission about the shortages in public health, the situation is critical. Given the current urgent need for Medical Officers of Health and community medicine specialists in Ontario, special consideration must be given to producing physicians who are likely to take up positions in public health, and more attention must be given to understanding and overcoming the barriers to this type of practice.

For example, some positions in the existing re-entry program could be allocated immediately to community medicine, giving family physicians who have an interest in public health the opportunity to receive the training they need. As a short-term or interim measure, MOHLTC could also consider providing bursaries or some form of financial support for family physicians to complete a masters in public health, which is another acceptable and fairly fast route of training for Medical Officers of Health.

REFINING THE MODELS

In developing and using access modelling, the Expert Panel has taken the first steps in establishing data models that can take into account the complex mix of factors that affect both the population's health needs and the supply of physician services. However, if these models are going to become effective planning tools, they must be tested and refined.

The Expert Panel recommends that:

#13 HHRAP continue to develop and refine sophisticated data models and planning tools that can be used to measure both health needs and the capacity of the system to meet those needs.

In particular, HHRAP should:

- update the Expert Panel's access model annually

29 *The Systemic Therapy Task Force. Systemic Therapy Task Force Report. Presented to Cancer Care Ontario. April 2000.*

30 *Regional Geriatric Programs of Ontario. Summary: Survey of Geriatric Physicians. May 2000.*

- ensure that future iterations of the model include micromodelling for each specialty
- use the model to study and assess the need for resources to meet priority health needs
- adapt the model for use in planning at the regional and local level, ensuring that it can take into account the issues of physician distribution and critical mass
- continue efforts to develop a needs-based approach to determining population health needs and related provider requirements.

INCREASING ONTARIO'S CAPACITY TO PROVIDE PHYSICIAN SERVICES

The Expert Panel data modelling exercises confirm the conclusions of the provincial Fact Finder, the findings of the Canadian Medical Forum, and the experience of many health professionals and consumers in communities across the province. Ontario has a problem with effective physician supply, which will increase as the large cohort of older physicians retire and as physicians seek more manageable workloads and more balanced lives.

Problems of physician supply are not unique to Ontario. Within the last eight months, five other provinces have announced increases in enrolment in their medical schools, and jurisdictions such as the United Kingdom and Australia have also made dramatic increases (i.e., 20%) in physician production.

While more work must be done to improve physician workforce data and refine planning models, Ontario cannot wait for the "exact" numbers to develop strategies to increase supply. It must begin now, using the data developed to date.

Of the three scenarios it examined, the Expert Panel believes that the first – the status quo – is unrealistic in its projections of the demand for services and of workforce requirements. The Expert Panel believes it is unreasonable to expect the physician workforce to continue to maintain workload levels that are significantly higher than they were five years ago, particularly given the changing attitude toward work and gender mix within the profession. It is also unreasonable to assume that the high levels of physician migration out of Ontario experienced during the 1990s will continue. Given the investment that Ontario makes in training physicians and the current physician shortage, the province is more likely to ensure that other policies do not encourage emigration.[31]

With the second scenario – the increase in demand for services and decrease in physician workload with no other initiatives to moderate the need for physician services – the shortfall of physicians is significant, and beyond the capacity of the province's educational and fiscal resources. The Expert Panel also believes it would be short-sighted and contrary to Ontario's commitment to providing more multidisciplinary care to try to solve the problem only by adding physicians.

31 *As a result of the McKendry recommendations, the province is now actively trying to persuade Ontario physicians who left during the 1990s to return, and a number of the proposed Expert Panel initiatives are also likely to make Ontario more – not less – attractive to physicians.*

Of the three scenarios, the Expert Panel believes that the third – the increase in demand for services, decrease in physician workload and strategic use of other health providers and policies – reflects the most realistic view of Ontario future health workforce. This scenario makes some key assumptions about the potential to encourage physicians to provide more comprehensive care, to make more effective use of nurse practitioners and midwives, and to manage public demand for health services, including physician services. It also gives the province tools to manage the physician shortfall that, given the time it takes to produce new physicians, is likely to get worse before it gets better.

To create the environment described in Scenario 3 and produce both the right supply and mix of physician services, the Expert Panel proposes that the health system increase its capacity to:

- produce physicians
- use the postgraduate training system to manage the mix of physician skills
- make more effective use of existing resources – by capitalizing on health professionals who, with some training and/or other support, would help increase the supply of physicians services
- manage the demand for physician services.

PRODUCE PHYSICIANS

Based on Scenario 3, Ontario has a shortage of 236 physicians now and will have a shortage of 1,367 physicians in 2010 – if it does nothing to increase the supply of physician services in the province. Even with the supportive policies and strategies that are part of Scenario 3, such as more effective use of nurse practitioners and midwives[32], Ontario will still need to produce a significant number of additional physicians to meet health needs.

Given the preliminary nature of the data model (which does not take into account the contribution of postgraduate trainees to physician supply), the capacity of the medical education system, and the desire to avoid some of the mistakes of the past, the Expert Panel proposes that Ontario be somewhat cautious in its efforts to address the predicted physician shortfall. It suggests that the province aim to increase medical school enrolment by 160 over 1999 levels. It also suggests that Ontario take a relatively conservative approach, phasing in the initial increases in medical school enrolment over four years, and monitoring and evaluating their impact annually.

Academic Year	Cumulative New Intake (over 1999 levels)	Cumulative Minimum # of New Positions that are Streamed to CECs
2000/01	40	0
2001/02	120	20
2002/03	140	40
2003/04	160	60

In addition, the Panel proposes that the new positions be used strategically to help the AHSCs and CECs develop physicians who have the skills and aptitude for rural and remote practice, and to meet other health care needs.

The potential impact of an increase of this magnitude on the medical schools is obvious. What may be less obvious is the potential impact on the training sites. In making its recommendation to increase medical school enrolment, the Expert Panel recognizes that hospitals and other training sites will face increased costs as well as increased demands on their infrastructure. Gearing up to train significantly more students each year will be costly for all training sites, but it will be particularly challenging for non-teaching hospitals that must now develop a teaching capacity. They will need appropriate support and resources to take on that role.

32 *These strategies are discussed in more detail on pages 63 and 70.*

To ensure that Ontario has an adequate supply of appropriately trained physicians, the Expert Panel recommends that:

#14 MOHLTC, MTCU and the AHSCs increase undergraduate medical school enrolment by a total of 160 positions (including the 40 positions already added in the fall of 2000). These increases should:

- **be phased in over four years (40 in 2000, 80 in 2001, 20 in 2002 and 20 in 2003) to allow the training system to develop the necessary resources and capacity**
- **allocate a minimum of 60 of the new positions to northern/rural training, and contract with the sponsoring medical schools and the CECs to provide that education**
- **allocate a proportion of the new positions to training streams for underserviced populations (based on the recommendations of HHRAP) and contracting with the appropriate AHSC/CEC to provide that education.**

#15 MOHLTC increase the province's capacity to provide postgraduate medical training by:

- **increasing the number of funded entry level postgraduate training positions by 160 when required to match the increase in undergraduate enrolment**
- **providing funding for salary support and benefits for the additional postgraduate trainees.**

#16 MOHLTC provide additional funding to enable hospitals and other clinical training sites across the province to fulfil their role in undergraduate and postgraduate medical education.

MANAGE THE POSTGRADUATE TRAINING SYSTEM

Simply increasing medical school enrolment will not necessarily provide the mix of physician services Ontario needs. The specialties that physicians choose and the skills they develop depend on the pool of postgraduate training positions. Every effort must be made to manage that pool and to ensure it produces the "right" mix of specialists to meet the population's health needs.

Reallocating Positions. As noted earlier, more work must be done to determine the number of physicians in each specialty required to meet future needs, focusing particularly on specialties identified in short supply and those required to fulfil government commitments to provide priority health services. However, there is enough data now to begin to look at changes designed to adjust the mix of postgraduate positions. While it will take between five and nine years to increase the total number of new physicians produced (i.e., from the increase in undergraduate enrolment made in 2000), it is possible to increase the supply of certain specialties in two to four years by reallocating positions in the postgraduate system now.

Providing Greater Flexibility. Within the postgraduate training system, there is also a need for greater flexibility for existing trainees. In the early 1990s, when the number of postgraduate positions across Canada was reduced to match exactly the total number of undergraduate positions and the rotating internship was eliminated in Ontario, the training system lost any flexibility for trainees to change their specialty during training or for family physicians to re-enter training. At the current time, trainees have to choose a specialty very early in their undergraduate training, and have little or no opportunity to make a change during their education. The Expert Panel believes it is harmful for the health workforce to force trainees to stay in specialties they do not enjoy or for which they are not suited. This is not an effective way to develop the physician workforce or meet health needs. At the same time, it is not in the best interests of the health care system to allow trainees to switch into specialties that are well or over supplied. Instead, the education system should provide opportunities for students to change training programs, but limit those opportunities to specialties (including family medicine) that are in short supply or to priority health needs, as identified by HHRAP or a multi-partite postgraduate planning committee.

To increase flexibility in the system, the Panel proposes that, beginning in 2001, the ministry increase postgraduate (PGY1 or PGY2) positions by about 25 or 5% of the current class size. These positions will be available only to existing trainees in the Ontario system to enable them to transfer to other programs. The new positions will not add to the net output of trainees, but would change the mix based on specialty mix planning objectives. Unused positions and funding will be recovered annually by MOHLTC.

Creating Opportunities for Family Physicians. Through the postgraduate training system, the health care system can also encourage family physicians to take the extra training they may need to provide some specialized services, such as obstetrics, anaesthesiology, emergency medicine and psychiatry.

Building Capacity in the CECs. In the Expert Panel's proposal to decentralize medical education, the CECs would begin providing training at the postgraduate level, where they already have some capacity and where trainees have the potential to provide a significant amount of care (thereby helping to relieve some of the pressure on physicians in underserviced areas and, at the same time, producing new rural/northern physicians as quickly as possible). To enable that to happen, MOHLTC would have to provide funding for a small number of the new postgraduate positions (i.e., 25) for two years before the increase in undergraduate enrolment works its way through the system.

As discussed earlier, the new positions would likely attract trainees from other provinces and may be criticized. However, the Panel believes that this will be the fastest way to produce physicians with the skills to meet Ontario's needs. To mitigate the negative effect of the increase on other provinces, Ontario could consider opening these 25 positions to Canadian students who took their undergraduate medical training outside the country and want to return to Canada for postgraduate training.

To use the postgraduate training system to shape the mix of physician skills in Ontario, the Expert Panel recommends that:

#17 **HHRAP, in consultation with COFM, take immediate steps to review and provide advice on the current and future mix of specialty training positions, giving particular attention to:**

- **specialties identified as being in short supply or having severe problems with distribution, such as anesthesiology, general surgery, obstetrics, ophthalmology, orthopedics, and psychiatry**
- **priority health programs, such as cardiac surgery, oncology and geriatrics**
- **public health.**

#18 **MOHLTC provide funding, beginning in 2001, for up to 25 postgraduate training positions annually to give postgraduate trainees more opportunity and flexibility to transfer between residency positions. To ensure these positions help meet health care needs, they should be limited to specialties identified as in short supply and to specialties required to meet the needs of priority health programs.**

#19 **MOHLTC provide funding in 2001 for an additional 25 third year residency positions (PGY3) for enhanced Rural Family Medicine targeted to the needs of rural and northern communities.**

#20 **MOHLTC fund up to 25 of the 160 new entry level postgraduate training positions in 2002 and 2003, with all these positions to be located in the CECs and targeted to the general specialties in short supply.**

#21 **HHRAP, beginning in 2001, continually monitor and annually evaluate the impact of increases in undergraduate enrolment and the mix of postgraduate positions, and advise on adjustments required to meet health needs.**

MAKE MORE EFFECTIVE USE OF EXISTING RESOURCES

It takes nine to 12 years to prepare a new physician. The Expert Panel's recommendations on physician supply – combined with the earlier increases made after Dr. McKendry's Fact Finder report – will add about 862 doctors to the physician workforce by 2010 and about 1,700 by 2015, when the full impact of the increases will work their way into the system. Based on the initial data and modelling analysis, this may not meet all the population's need for physician services over the next 15 years – without other changes in the health care system. However, the Expert Panel cautions that its forecasts of the need for physician services and physician supply must be revisited regularly to ensure they reflect both changes in the health care system and improvements in forecasting methods.

To close the gap between need and supply, Ontario will have to make more effective use of other resources in the health care system now and in the future. While the Expert Panel's work is focused on medium to long-term, system-wide strategies to meet health needs, it has identified five groups that could play a valuable role in improving the supply, mix and distribution of physician services in the short to medium term: new physicians about to graduate, international medical graduates (IMGs), physicians already in practice, nurse practitioners and midwives. In fact, Ontario must make effective use of these health professionals, or risk a much larger physician shortfall.

Retain New Graduates

Each year, about 500 new physicians complete their post-graduate training and are licensed and eligible to practice in Ontario. Over the past few years, there has been fierce competition for those graduates from other provinces and from the United States. This is an important group of trained physicians, and every effort should be made to persuade them to stay in Ontario to practice, and to encourage them to work in underserved communities.

In his report, Dr. McKendry recommended action to reduce the number of recently certified physicians who pursue their careers outside Ontario. Over the past year, the Professional Association of Internes and Residents of Ontario (PAIRO) has pilot tested an individual resident placement program, designed to help match residents with Ontario communities looking for physicians.

In this program, PAIRO's resident placement officer (RPO) and an MOHLTC Community Development Officer (CDO) meet individually with residents who are nearing graduation to discuss their personal and professional goals. The RPO and CDO then develop a list of communities that can provide opportunities that match the residents' goals. The residents can then contact the communities directly or seek further information through the PAIRO Portal Registry. The online portal is a proven community focused recruitment tool for residents and other physicians seeking job opportunities.

During the pilot, the placement service was offered to a total of 62 residents. As of July 2000, 19 residents (31%) had been placed in northern or smaller communities (eight in permanent placements and 11 in locums), 15 had decided to take more training, and 21 had not yet made a decision.

PAIRO has submitted a proposal for a fully developed program, endorsed by the ministry CDOs, which will provide the matching service to about 100 residents each year, and also assess the potential of providing the service to physicians recently in practice but looking for a career change, and physicians who have chosen to do temporary locums during their first years of practice.

Recruit Qualified International Medical Graduates

While the Expert Panel supports a goal of provincial/national self-sufficiency in the development of the physician workforce, it recognizes that International Medical Graduates (IMGs) have always played and will continue to play a role in our health care system. Already trained, IMGs can be an important short-term solution to some physician supply problems (although historically IMGs have not been effective in addressing problems of physician distribution).

With IMGs, the issue is ensuring their skills and training meet Canadian and Ontario standards. Because of policy changes that occurred at the Royal College of Physicians and Surgeons in 1997, there has not been a mechanism to assess training of IMGs quickly. With the existing IMG program, funded by MOHLTC and offered by the University of Toronto, IMGs receive up to 42 weeks of undergraduate clinical training and must then take the full post-graduate training to meet certification requirements – regardless of whether they have taken post-graduate training outside Canada. This means another two to four years before the physicians in the program are able to practice.

The Expert Panel believes that some IMGs have already received the high quality education to be able to meet Canadian standards with little or no extra training. As of January 1, 2001, the Royal College of Physicians and Surgeons of Canada has also indicated its willingness to allow qualified IMGs who meet certain criteria to write certification exams.

Over the past few months, the College of Physicians and Surgeons of Ontario and the Council of Ontario Faculties of Medicine have collaborated to develop a proposal to screen, assess, train and license IMGs. The goal of the program is to attract fully qualified IMGs who are able to meet community needs and provide needed specialist skills. The program is designed to offer 25 selected candidates each year up to six months of academic assessment of their skills. Those who meet the assessment requirements for their specialty will then be able to take the appropriate certification exams; those who need some additional training will be able to receive up to two years of postgraduate education before taking their exams. Once they have successfully passed their exams, these physicians can be licensed to practise in Ontario.

The program will be open to IMGs who are Canadian citizens or landed immigrants, as well as to foreign nationals living outside Canada. To qualify for the program, IMGs must be qualified in their country of origin and have recently been in active practice. They must also be trained in specialties in need in Ontario. The postgraduate positions would be for the exclusive use of candidates who require training and would not be offered to candidates who, on the basis of their assessment, qualify to sit for certification exams.

Although COFM/CPSO have structured the program primarily to attract IMGs who are already working in some capacity in Ontario, MOHLTC should be aware the program may be criticized for "poaching" physician talent from other countries and from other provinces. Any effort to recruit IMGs must be sensitive to the fact that Canada and Ontario have already been criticized for attracting skilled physicians from less developed countries whose health needs match or exceed our own.

Encourage Physicians to Provide More Comprehensive Care

The Expert Panel's data modelling exercises revealed that a growing number of family physicians no longer offer services, such as obstetrics, emergency services or anesthesiology. If this highly competent, skilled group could be encouraged to provide a more comprehensive range of services, they could add significantly to the effective supply of physician services, particularly in smaller communities.

The Panel's projections on physician supply are based on the assumption that it is possible, with the right incentives, to change physicians' practice patterns and to restore the relative proportion of generalists to specialists providing certain services to 1995 levels.

The main factors that determine comprehensiveness of care are financial. Many physicians feel they are not adequately compensated for services such as delivering babies, and that they can earn more in their office practice than by providing services in hospitals. The use of sessional fees (e.g., in emergency departments) has been effective in the past in encouraging physicians to provide services their communities need, and the Expert Panel believes that similar incentives will work in the future. With regard to obstetrics, the exorbitant cost of liability insurance is also a barrier for family physicians and for a growing number of obstetricians.

To ensure that physicians currently in practice and those who will enter the workforce provide comprehensive care, the ministry and the profession must remove any barriers and provide appropriate incentives.

Promote Collaborative Physician/NP Practice

In its decision to train nurse practitioners and to focus on interdisciplinary primary care teams, Ontario has already made a commitment to the NP role in primary care. However, Ontario's ability to integrate NPs into primary care has been limited by lack of employment opportunities.

In the fall of 1999, MOHLTC established a $10 million (annual) fund for 106 NP positions in four priority settings (i.e., 76 in underserviced areas, 20 in long-term care settings, 5 in aboriginal health centres, and 5 in the pilot primary care networks).[33] While these positions provide employment opportunities for existing NPs, they will not meet the employment needs of the 300 NPs who will graduate over the next three years.

As noted in the section on data models, effective use of NPs can have a positive impact on the availability of primary care services. Findings of a literature review and research conducted by the Expert Panel indicate that a collaborative physician/NP practice can provide primary care for 25-50% more patients than a physician practice without NPs. Collaborative practices also have the potential to reduce some of the pressure on physicians, particularly in underserviced areas, and to reduce the time that patients have to wait for appointments.

Collaboration doesn't just mean more care, it means different care. While there is some overlap between the primary care services provided by physicians and NPs, each professional also brings unique skills and knowledge to a collaborative practice. Together, they offer more comprehensive patient care, as well as the opportunity to provide more preventive health services. This should translate into healthier patients, less need for health services and lower costs for the health care system. The collaborative relationship also allows both professionals to pursue their strengths and interests, which leads to greater job satisfaction and higher morale.

The Expert Panel also learned that the public responds well to these collaborative working relationships, and that physicians also welcome the relationship, when it has no negative impact on their earning potential.

However, Ontario's ability to make effective use of NPs and to promote collaborative practice is currently limited by:

- the small pool of NPs – given existing training programs, Ontario will only have a total of 600 NPs in three years' time, and not all will choose to work in primary care[34]
- lack of an established ongoing mechanism for primary care organizations/practices to access funding to hire NPs
- lack of adequate compensation for the overhead and consultation costs associated with having an NP in practice with a physician
- concern/conflicting advice about the physician's liability for the NP's care
- lack of office space which, in private practices, is provided by the physician and is part of overhead costs (i.e., in recent years, with the increase in rents, many physicians have downsized their offices to reduce overhead costs and do not have space to accommodate an NP)

33 *Of the 106 positions, 84 are filled or committed, including 59/76 in underserviced areas, 15/20 in long-term care, 4/5 in aboriginal health and 4/5 in primary care networks.*

34 *The Expert Panel estimates that about 75% of new NP graduates will work in primary care. The remaining 25% will be employed in other settings, such as long-term care facilities, emergency departments, and home care.*

- workload issues, including the learning curve (three to nine months in a family practice and one year in an emergency department) before the NP is working at full capacity, and regulatory and legislative barriers (e.g., the Public Hospitals Act) that prevent NPs from practising to their full scope
- lack of ongoing, permanent funding for NP training – at the current time, all funding is provided by the MOHLTC through time-limited agreements with MTCU; a commitment must be made to provide stable, long-term funding to maintain the NP training programs and adjust enrolment as required
- physician attitudes – some physicians continue to see NPs as a threat to their income/earning potential; however, this is less of an issue for physicians working in areas underserved for primary care, or for physicians working in a salaried model – who seem receptive to working with NPs, if the other barriers can be removed.

To be able to make more effective use of NPs, the Expert Panel stresses that the ministry must address the following issues:

Compensation

- Encourage primary care physicians to shift to alternative funding plans, which would provide the flexibility to hire NPs and cover the associated overhead costs.
- Address the controversial issue of appropriate compensation for fee-for-service physicians by establishing a flat or capitated fee to cover the NP's portion of overhead costs, and considering a flat or capitated fee for physicians' time spent consulting with NPs.
- Provide stable, ongoing funding for all NPs, and a means to pay those in primary care that will reflect the collaborative nature of the practice (i.e., NPs should not be employees of physicians).

Workload Issues

- Remove the regulatory barriers to effective NP practice (e.g., Public Hospitals Act, NP drug formulary).
- Allow specialists to bill for consultations for patients referred by NPs working in collaborative practices with family physicians.
- Have HHRAP examine physician/NP collaborative practices to identify expectations for NPs and provide advice for NP recruitment and training programs.
- Whenever possible, place NPs with the physicians they will work with during their training, and allow the initial development of the working relationship to occur within a learning situation.

Liability Issues

- Request the Canadian Medical Protective Association (CMPA), the College of Nurses (CNO), and the Registered Nurses Association of Ontario (RNAO) to develop joint guidelines on liability for physicians and NPs working in collaborative primary care practices within office, clinic and emergency settings.

Education Issues

- Work with the Ministry of Education and Council of Ontario University Programs In Nursing (COUPN) to develop stable, long-term funding for NP education.
- Ensure that NP education programs continue to attract students who are likely to choose rural, northern or underserviced practice, and provide appropriate training for those settings and populations.

NPs have the potential to increase Ontario's capacity to provide primary care. They can be trained relatively quickly (compared to physicians), and they bring valuable skills to primary care. However, they are currently being produced in such small numbers that it is difficult for them to have a significant impact. For these reasons, the Expert Panel suggests that Ontario consider increasing production of NPs. However, the Expert Panel is aware that there is also a nursing shortage in Ontario. The decision to develop more NPs should take into account any potential negative impact on the supply of nurses and nursing care.

As with the physician workforce, every effort should be made to recruit a proportion of NP trainees who are likely to choose to work in underserviced areas or with underserviced populations. As Ontario's NP training program is already highly decentralized (i.e., in nine sites across the province), it is extremely effective in attracting students from rural and remote communities and in providing training opportunities in smaller communities. All these factors are likely to lead to a proportion of NPs who are likely to choose rural and remote practice settings.

Remove Administrative Barriers to Midwifery Practice

As noted earlier, Ontario educates about 40 midwives each year. Each midwife performs about 40 deliveries per year. Approximately 30% of midwife deliveries require some degree of intervention on the part of an obstetrician-gynecologist. According to anecdotal reports, the interventions are often required for administrative rather than clinical reasons. For example, some hospitals place arbitrary limits on the number of midwives with hospital privileges or on the number of deliveries midwives can do. Because midwives are not allowed to consult directly with an anesthesiologist, a midwife's patient who needs an epidural must be referred to a physician.

If these artificial barriers were removed, midwives would be able to perform a larger proportion of unassisted low risk deliveries, thereby relieving the pressure on obstetricians.

To enable the health care system to make more effective use of existing resources, the Expert Panel recommends that:

#22 MOHLTC provide funding for three years to support the PAIRO Resident Placement Program to assist trainees who are ready to enter the workforce. To determine the long-term potential of this program, HHRAP should:

- **evaluate the success of the program in matching new physicians to communities in need**
- **assess its impact on the supply, mix and distribution of physicians in Ontario**
- **make recommendations, based on the evaluation, about ongoing long-term funding.**

#23 MOHLTC fund, on a four-year pilot basis, the COFM/CPSO proposal to license up to 25 fully qualified IMGs annually. Funding should be provided to screen potential candidates, and to allow each successful candidate to undergo up to six months of assessment and, if necessary, up to two years of postgraduate training. The program will be limited to specialties or communities in short supply. HHRAP should evaluate the impact of the program on the supply, mix and distribution of physician services in Ontario, and advise on the future of this program.

#24 HHRAP assess and provide advice on incentives to encourage existing specialists and family physicians to provide more of the services that are in short supply, such as psychiatry, obstetrical care, emergency and anesthesiologist. HHRAP also assess the impact that the cost of liability insurance has on access to certain health services and provide advice on how to address this issue.

#25 MOHLTC take steps to remove the barriers to collaborative physician/nurse practitioner primary care practice, and provide the funding to integrate a minimum of 75 nurse practitioners a year for the next five years into collaborative physician/NP practice, starting first in settings where collaboration has been successful.

#26 HHRAP assess the potential to double the number of nurse practitioners graduating, beginning no later than 2006. The assessment should include the ability to recruit, train and place nurse practitioners as well as the impact that doubling production of nurse practitioners will have on nursing supply in the province.

#27 MOHLTC work with hospitals to remove any artificial barriers that may prevent midwives from functioning appropriately within their scope of practice, thereby increasing the proportion of unassisted low-risk deliveries that midwives are able to perform each year.

MANAGE DEMAND

While all these initiatives to increase or maximize supply will help, the Expert Panel believes that not all Ontario's efforts to manage the health workforce or health services should focus on supply. As Dr. McKendry suggested, some attention should also be given to managing demand and ensuring that people use health services appropriately. The Expert Panel based its forecast for physician supply on the assumption that Ontario would actively manage demand and recommends that:

#28 MOHLTC develop initiatives designed to reduce inappropriate use of health services by educating the public about when to see a physician or other health care provider.

IV. Attract and Retain Physicians Where They are Needed

As of the fall 2000, 107 Ontario communities (33 in the north and 74 in the south) were designated as undersupplied for physician services and were looking for a total of 456 family physicians. In addition, 12 communities in the north were designated as underserviced for specialist services and were looking for a total of 123 different specialists.[35]

These figures highlight the need for physicians in underserviced areas. They also indicate how crucial it is for Ontario to keep the physicians who are already working in rural, northern and underserviced communities. As Dr. McKendry and others have noted, Ontario has invested significant resources in attracting physicians to underserviced areas, but little to persuade them to stay. In fact, many current recruitment programs simply attract physicians from one underserviced area to another, which only moves rather than solves the problem. For this reason, the Expert Panel has focused on meeting the needs of physicians who are in rural and remote practice now, as well as new recruits.

Based on experience in Ontario and in other jurisdictions, physicians are more likely to choose to stay in remote, rural and underserved practice when:

- they are organized in group practices that can provide collegial support, share on-call obligations, and provide a mix of specialized skills such as anesthesia, obstetrics, palliative care
- the compensation system recognizes the difficulties/challenges of this type of practice
- they have access to a range of effective, evidence-based retention strategies
- there is adequate infrastructure, including appropriate hospital resources
- they have appropriate technology and access to continuing medical education
- there is an adequate supply of other health providers to support a multidisciplinary approach to care
- they are able to lead a balanced lifestyle.

According to a recent survey of rural family physicians in Ontario, the supports and incentives most important to them in their practice are: adequate compensation, (particularly for low-volume services such as covering the hospital emergency department, anesthesiology and obstetrics), a reasonable on-call schedule (i.e., no more than one in five nights), quick and easy access to specialists when needed (e.g., by phone, fax or e-mail), opportunities for CME and specialty training, and overhead support.[36]

To make rural practice more attractive, Ontario must ensure the compensation system accurately reflects the difficulties/challenges of working in rural and northern communities and invest in effective recruitment and retention initiatives.

35 *Specialists are also in short supply in parts of southern Ontario, but there is no program to designate communities for specialized services in the south.*

36 *Incitti F. Rourke J. Rourke L. Kennard M. (Survey of Rural Family Physicians and Family Physicians in Training). In publication. Funded in part by the Ontario Medical Association CME Fund. Project support provided by the Southwestern Ontario Rural Medicine Education, Research and Development Unit.*

DEVELOP A RURALITY INDEX

Providing medical care in small, rural or remote communities can be significantly more demanding and difficult than working in larger urban centres, and that should be recognized in the compensation and support provided to physicians. Several attempts have been made in the past to develop a rurality index that could be used to determine the compensation that should be offered. The Expert Panel reviewed past efforts to develop rurality indices, and identified a number of weakness, including:

- the use of geopolitical boundaries rather than actual referral patterns, which means that the index does not accurately represent catchment areas or referral patterns for physician services
- lack of attention to specialist services - indices are generally developed for family physicians and little work has been done to develop a rurality index for specialists services (i.e., Sault Ste. Marie may be well served by family physicians, but have significant shortages of specialist services)
- data used for the rurality indices tend to be based on "active physicians" and not FTEs, which can either over- or under-estimate the effective supply of physician services.

In the Expert Panel's view, a workable rurality index must be able to reflect the challenges in various working environments. As the north will always be at a disadvantage in recruiting and retaining physicians and other providers, an effective rurality index must also be able to distinguish between communities in the north and those in the south.

Despite the difficulty of accurately capturing the challenges of different working environments, the Expert Panel believes that a rurality index would be an effective tool to improve physician retention. To increase Ontario's capacity to attract and retain physicians working in rural, remote and underserviced areas, the Expert Panel recommends that:

#29 HHRAP develop an equitable, workable rurality index for specialty and family practice that can be used to quantify the degree of rurality and remoteness of physician practice in different communities across Ontario, and form the basis for compensation and incentive programs.

Once a reasonable, accurate rurality index has been developed, it could be applied to determine the number and level of incentives available to physicians (see recommendation #30). The rurality index could be used in two ways:

- to identify those physician practices with a high degree of rurality that would be eligible for particular incentives
- to determine how incentives that are available to all rural physicians would be weighted to recognize rurality.

For example, all rural and northern physicians should be eligible for some incentives, such as a premium for long service, but the amount of the premium should vary depending on the physician's degree of rurality. That is, those with a high rurality index would receive a higher premium than those with a low rurality index.

DEVELOP A MENU OF RETENTION INCENTIVES

In their recent review of recruitment and retention strategies, Barer and Stoddart noted that "the problem of geographic maldistribution [is] the most difficult to solve of all of the physician resource policy problems ...and that no optimal "solution" was likely possible. What [is] possible [is] a sustained management strategy to reduce the problem." [37]

To develop that kind of sustained and sustainable management strategy, Ontario should build on its own lengthy experience trying to recruit and retain physicians in underserviced areas, as well as evidence from other jurisdictions.

WHAT WORKS NOW

To identify the kind of incentives that work, the Expert Panel consulted with representatives of the MOHLTC Northern Health Programs office, which administers the Underserviced Area Program (UAP). Based on its experience trying to recruit and retain physicians in underserviced areas, the UAP has generally found the following incentives to be effective:

- community-sponsored contracts (CSCs), a compensation incentive that allows certain small rural and isolated communities in northern Ontario[38] to attract and keep physicians. When the program began, 60% of positions in eligible communities were vacant . Currently, only 8% are vacant. There are now 32 physicians on CSCs in 22 communities: 20 new physicians and 12 existing physicians who remained in the community but transferred from fee-for-service to CSCs.

- incentive grants, a financial incentive to take up practice in rural or remote communities that also exempts physicians from the billing threshold. In the past two fiscal years alone, 159 new incentive grants were awarded to newly recruited physicians (31 to GPs in the south, 65 to GPs in the north and 63 to specialists in the north). A sampling of incentive grants shows that more physicians (23%) remain in the community at least four years (the duration of the incentive grant) than leave the community in less than four years (13%).

- the introduction of nurse practitioners. In February 2000, the ministry announced funding for 76 NP positions in underserviced areas (43 in the north and 33 in the south). As of December, 2000, 58 NPs in that program have started to practice in underserviced communities.

- nursing stations, facilities staffed by a nurse or NP, with arrangements for physicians to make regular visits, established in communities that cannot support a physician. In 1999/2000, a total of 60,394 patient visits were made to the 21 stations (40,756 patients were served by nurses or NPs while 19,638 patients were served by physicians).

- access to specialist services in northern Ontario through the Visiting Specialist Clinic and Specialist Locum Tenens Programs. Those programs provided a total of 9,819 days of specialist services in 1999/2000 alone.

37 *Barer M, Stoddart G. Improving Access to Needed Medical Services in Rural and Remote Canadian Communities: Recruitment and Retention Revisited. June 1999. Centre for Health Services and Policy Research. UBC.*

38 *Communities that have the greatest difficulty recruiting and retaining physicians have the most urgent need for physicians and do not have access to primary care in nearby communities.*

WHAT NEEDS IMPROVEMENT

Based on past experience, the UAP also believes that, with some improvements, the following incentives would be more effective:

- Northern Health Travel Grant (NHTG), which assists patients who must travel at least 100 km to obtain specialty services not available in their own communities. In 1999/2000, NHTG processed 104,932 claims. NHTG is historically underfunded and operates in a deficit. For example, the NHTG budget in 2000/01 is $6 million, but expenditures will be $10 million. More permanent funding could improve patient access to specialist services.
- the underserviced area designation process, which is based on physician-to-population ratios. When larger communities are designated as underserviced (i.e., GP/FP designations in southern Ontario), smaller northern or southern rural communities are less likely to be successful in their recruitment efforts.
- the GP locum program administered by the OMA. Service levels have apparently been reduced significantly since the program was transferred to the OMA.

PROPOSED INCENTIVES

Having reviewed the incentives that appear to be effective, the Expert Panel favours a menu of incentives that physicians can choose from - rather than a cookie cutter approach to compensation and support.

In the Expert Panel's view, the following chart illustrates an attractive menu of incentives as well as the types of incentives that might be available based on different levels of rurality.

To improve the capacity of the system to retain physicians in underserviced areas, the Expert Panel recommends that:

#30 MOHLTC, in consultation with HHRAP and the Physician Human Resources Subcommittee of the OMA/MOHLTC Physician Services Committee:

- **establish a menu of incentives/initiatives which would be available to physicians based on their degree of rurality**
- **make an initial allocation of $10,000,000 in 2001 (over and above any existing contracts) to fund those incentives**
- **determine the future funding required for incentives.**

MENU OF INCENTIVES

HIGH RURALITY (incentives 1-12)

MEDIUM RURALITY (incentives 4-12)

Low RURALITY (incentives 10-12)

1. providing "turn-key" practices that include infrastructure and overhead costs (e.g. staffing costs, benefits, equipment, operating room time, diagnostic support), which encourage solo physicians to move into group practices
2. increasing incentive grants (which have not changed since 1979) and providing them in a lump sum rather than annually
3. adjusting funding levels for alternative payment plans (APPs) to reflect the critical mass required for on-call, vacations, benefits, CME leaves over and above UAP minimum
4. providing compensation for specialists who provide telephone advice/consults
5. expanding CME funding (including locum coverage) to a wider range of physicians depending on degree of rurality
6. providing funding and locum support for: maternity/paternity/adoption leave, sabbaticals and short-term leaves (The eligibility for funded leaves could vary depending on type of leave and degree of rurality. For example maternity/paternity/adoption leaves should be available for those practising in a low rurality area, whereas funding for sabbaticals may apply only to those in areas of high rurality.)
7. paying financial premiums to physicians for long service (i.e., after four to five years of service in a community), with the premium amount determined based on rurality and on the need for the type of service (e.g., obstetrics, emergency services, anesthesiology, office practice)
8. enhancing levels of funding for locum coverage and expanding current eligibility for locum coverage in direct relationship to enhancements in CME, maternity/paternity, vacations, and sabbaticals (Other strategies to improve the available locum pool should be explored, such as repayment of ROS contracts via locums, provincial locum license, allow existing doctors in UAP communities to access locum funding if they cannot attract locums.)
9. providing funding support for communications technology and medical informatics
10. funding for nurse practitioners to work collaboratively with physicians, both in a fee-for-service and an alternate payment plan setting
11. expanding eligibility for APPs and AFPs to both family physicians and specialists in all underserviced areas in both the north and the south, and indexing the funding available within an APP/AFP to the practice's degree of rurality
12. expanding additional on-call and emergency room funding (for both APP and fee-for-service physicians), beyond the provisions of the OMA agreement to apply to more specialties, and ensuring the level of compensation reflects rurality and the required call schedule.

MENU OF INCENTIVES

HIGH RURALITY (incentives 1-12)

1. providing "turn-key" practices that include infrastructure and overhead costs (e.g. staffing costs, benefits, equipment, operating room time, diagnostic support), which encourage solo physicians to move into group practices
2. increasing incentive grants (which have not changed since 1979) and providing them in a lump sum rather than annually
3. adjusting funding levels for alternative payment plans (APPs) to reflect the critical mass required for on-call, vacations, benefits, CME leaves over and above UAP minimum

MODERATE RURALITY (incentives 4-12)

4. providing compensation for specialists who provide telephone advice/consults
5. expanding CME funding (including locum coverage) to a wider range of physicians depending on degree of rurality
6. providing funding and locum support for: maternity/paternity/adoption leave, sabbaticals and short-term leaves (The eligibility for funded leaves could vary depending on type of leave and degree of rurality. For example maternity/paternity/adoption leaves should be available for those practising in a low rurality area, whereas funding for sabbaticals may apply only to those in areas of high rurality.)
7. paying financial premiums to physicians for long service (i.e., after four to five years of service in a community), with the premium amount determined based on rurality and on the need for the type of service (e.g., obstetrics, emergency services, anesthesiology, office practice)
8. enhancing levels of funding for locum coverage and expanding current eligibility for locum coverage in direct relationship to enhancements in CME, maternity/paternity, vacations, and sabbaticals (Other strategies to improve the available locum pool should be explored, such as repayment of ROS contracts via locums, provincial locum license, allow existing doctors in UAP communities to access locum funding if they cannot attract locums.)
9. providing funding support for communications technology and medical informatics

LOW RURALITY (incentives 10-12)

10. funding for nurse practitioners to work collaboratively with physicians, both in a fee-for-service and an alternate payment plan setting
11. expanding eligibility for APPs and AFPs to both family physicians and specialists in all underserviced areas in both the north and the south, and indexing the funding available within an APP/AFP to the practice's degree of rurality
12. expanding additional on-call and emergency room funding (for both APP and fee-for-service physicians), beyond the provisions of the OMA agreement to apply to more specialties, and ensuring the level of compensation reflects rurality and the required call schedule.

Implementation Costs and Timeline

The Expert Panel has laid out an ambitious plan to shape the physician workforce and ensure an adequate supply of physician services for Ontario. Its initiatives are also designed to lead to more comprehensive, integrated health workforce planning in the future.

PRELIMINARY COST ESTIMATES

In implementing the 30 recommendations, the health care system will incur a range of costs. The investment will be relatively modest in the first year, but grow over a period of about six years until all initiatives are implemented. Once implemented, the planning tools, the CECs, the changes in physician education, the effective use of other health resources and providers, and the incentives will require a certain amount of funding each year to maintain.

The following chart lays out some initial, rough estimates of the costs associated with each initiative. The Expert Panel cautions that these costs are preliminary. All the initiatives will have to analyzed in more detail over the next three to four years to determine the exact development and ongoing costs.

PRELIMINARY COSTING OF EXPERT PANEL RECOMMENDATIONS ($ MILLIONS)

Initiative	2001-02 Year 1	2002-03 Year 2	2003-04 Year 3	2004-05 Year 4	2005-06 Year 5	2013-14 Year 14 Maturity-Estimates
Health Human Resources Advisory Panel	0.500	0.500	0.500	0.500	0.500	0.500
Develop health human resources databases and models	0.100	0.350	0.400	0.400	0.400	0.400
Increase undergraduate medical enrolment by 160 (capital and operating)	13.020	22.400	16.800	13.000	13.800	14.200
Increased postgraduate positions (including salaries and operating costs for universities and hospitals)	2.835	6.895	12.201	19.882	34.606	126.370
Decentralize medical education - CECs (capital, one-time and operating)	9.000	12.000	19.000	15.000	15.000	15.000
Assessment and training of IMGs	1.255	4.230	4.230	4.230	4.230	4.230
PAIRO resident placement proposal	0.212	0.185	0.185	0.185	0.185	0.185
Employ 75 NPs annually and double production by 2006	7.500	7.500	7.500	7.500	9.200	16.700
Recruitment/retention - rurality based incentives	10.000	10.000	12.000	12.000	12.000	12.000
Total	**44.422**	**64.060**	**72.816**	**72.697**	**89.921**	**189.585**

Although the costs may seem significant, the Expert Panel stresses that as a proportion of Ontario's $22 billion total health care budget, they represent an addition or reallocation of less than 1% when fully implemented and significantly less during development. This is a relatively small investment to provide equitable access to physician services.

In addition to these development, education and incentive costs, the Expert Panel notes that the health care system will also face the long-term cost of the additional physicians who will enter practice over the next five to 15 years.

PROPOSED IMPLEMENTATION AND EVALUATION TIMELINE

In its recommendations, the Expert Panel has proposed a start date for each initiative, and set out requirements for ongoing monitoring and evaluation. The following chart illustrates when each initiative will be developed and implemented as well as when it will be subject to evaluation.

Expert Panel Recommendations	01/02	02/03	03/04	04/05	2005 and beyond
Health Workforce Planning					
1./2. Establish HHRAP and provide financial support for database development					
Decentralize Medical Education					
3./4. Build on existing relationships to create and fund clinical education campuses					
5. Develop an integrated plan for decentralized medical education					
6. Take steps to address issue of funding and incentives for clinical teachers					
Develop Appropriate Training Streams					
7. CECs/AHSCs develop rural/northern training stream and admission process					
8. Identify and develop training to address needs of distinct populations					
9. Assess potential of clinical scholars stream for northern/rural					
10. HHRAP evaluate effectiveness of CECs in implementing training streams					
Ensure Quality					
11. MOHLTC fund development of education specialists program					
12. Government increase investment in CME					
Refine Forecasting Models					
13. HHRAP to continue to develop and refine needs-based forecasting models					
Produce Physicians					
14. MOHLTC and AHSCs increase undergraduate positions by a total of 160 positions (including additional 40 implemented in fall of 2000)					
a. Phase in increase over 3 years (80 – 2001, 20 –2002, 20 – 2003)					
Evaluate impact annually (see rec. 21)					
b. Allocate a minimum of 60 positions to CECs in northern/rural stream					
c. Allocate some of positions for underserviced population training stream					

Expert Panel Recommendations and	01/02	02/03	03/04	04/05	2005 beyond
15. Provide funding to increase residency positions to match undergraduate increase					
16. Provide additional funding for hospitals and other training sites					
a. Start-up/development costs					
b. Ongoing operating costs					
Manage the Postgraduate Training System					
17. HHRAP/COFM to immediately review need to redistribute training positions					
18. MOHLTC provide 25 postgraduate positions for career flexibility					
19. MOHLTC to provide funding for 25 PGY3 in FM for CECs					
20. MOHLTC to provide funding for 25 postgraduate positions at CECs in 2002 and 2003					
21. HHRAP to review annually impact of increases in enrolment					
Make More Effective Use of Existing Resources					
22. MOHLTC to provide funding for PAIRO Resident Placement Program					
23. MOHLTC fund, on pilot basis, CPSO/COFM IMG proposal					
24. Assess incentives/barriers to providing physician services in short supply					
25. Remove barriers and provide funding for a minimum of 75 NPs per year					
26. HHRAP assess potential to double production of NPs by 2006					
27. Ensure policies/protocols maximize independent midwifery practice					
Managing Demand					
28. Develop public awareness program to reduce inappropriate utilization					
Increase Capacity to Recruit and Retain Physicians					
29. HHRAP to develop rurality index					
30. Establish menu of incentives and provide $10M in first year					

Legend:

Start-up and implementation
Continuation of initiative/program
Continuation pending review/evaluation

Conclusion

It will be several years before the full impact of the Expert Panel recommendations will be felt within the health care system. The following table lists the impact of the 33 postgraduate positions added in response to Dr. McKendry's recommendations along with the increases and other initiatives recommended by the Expert Panel on the supply of physicians in Ontario in 2010 and 2015.

	Cumulative Increase in Supply by 2010	Cumulative Increase in Supply by 2015
McKendry Recommendations: repatriation, expansion of IMG program, expansion of Family Medicine North	268	391
Expert Panel Recommendations: 160 increase in medical school enrolment per year phased in over four years; 25 IMGs per year beginning in 2001; and 25 additional PGY1 positions in 2002 and 2003 only[39]	594	1309
Total	**862**	**1700**

Beginning in 2015, when all the Expert Panel and McKendry increases will have worked their way through the education system and into the workforce, Ontario will be producing 42% more physicians each year than it did in 2000 – a substantial increase. It will also have a much larger pool of postgraduate trainees who will provide a significant amount of clinical care – particularly in hospitals – and will contribute to the effective supply of physician services in Ontario.

With the Expert Panel recommendations, Ontario will not only be able to produce more physicians, it will have the potential to create a more appropriate mix of physician services, and to provide a sustainable source of physicians trained for rural, northern and underserviced practice.

These increases and shifts in the medical education system will go a long way to solving Ontario's need for physician services. However, the health system's ability to meet the population's health needs over the next 15 years and into the future will depend on other resources as well as physicians.

39 *Effective 2004, these 25 entry level positions will become part of the total 160 increase in enrolment/postgraduate positions. However, by implementing these positions in 2002 and 2003 – two years before the increase in undergraduate enrolment works its way into the postgraduate system – the system will be able to accept 50 additional trainees who will train at the CECs This will produce 50 additional physicians in approximately 2 to 5 years after the start of their training.*

In its deliberations, the Expert Panel has tried to touch on virtually all factors that affect where and how physicians practice and the type of services they provide, including how physician services are planned, where and how physicians are educated, the role of other providers, the impact that other health policies have on physician services, and physicians' working conditions and incentives. The Panel's recommendations represent a comprehensive, strategic, system-wide approach to physician workforce planning. Taken together, they offer Ontario the opportunity to plan and manage physician services effectively. Implemented selectively, they will fail to have the desired impact and could have serious negative effects on the health care system.

Panel members caution the Ministry of Health and Long-Term Care about the risk of implementing certain recommendations, and ignoring others. For example, if the ministry makes the recommended increase in physician supply, without making fundamental changes to the education and training system, the inequities (i.e., distribution problems) in the system will become more acute. If it implements the proposed increase in supply, but does not develop other supportive health policies (i.e., efforts to manage demand for services, policies to encourage more comprehensive practice, and greater collaboration between physicians and nurse practitioners), then the province will continue to struggle with a shortfall in physician services.

To achieve its goals, the ministry must use all the available levers and tools, including planning, undergraduate education, postgraduate training, continuing medical education, incentives and other health policies that can shape physician practice.

The Panel recognizes that its proposals will require significant investment in universities, teaching hospitals and the health insurance system. Based on an initial assessment, Expert Panel initiatives will cost about $45 million in the first year, and about $190 million a year once all programs are up and running. While the costs may seem high, the Expert Panel notes that they actually represent a relatively small proportion – less than 1% – of Ontario's total health care budget.

Five years ago – when spending on health care was constrained in all parts of Canada – this plan would not have been possible. With the current fiscal climate, Ontario has a unique opportunity to establish an ongoing capacity to plan physician services, to reshape the way physicians are trained, to improve the mix and distribution of physician skills, and to confront inequities in health care. It also has the opportunity to lay the groundwork for integrated health workforce planning, which will be vital for the future of the health care system.

At this point in the evolution of Ontario's health care system, the Expert Panel members believe that Ontario must make every effort to capitalize on opportunities to shape the health workforce. The return on the investment in health human resources – measured in improved quality and equity of care, greater patient and provider satisfaction, and the sustainability of the health care system – will be substantial. Without this investment, the quality of health care in Ontario will decline, and Ontario's "Blueprint" for a stronger health care system will be at risk. To safeguard the future, Ontario must invest today.

Appendix 1:

Members of the Expert Panel and the Working Groups

ABOUT THE PANEL MEMBERS

Dr. Peter George is Chair of the Expert Panel. He is a well-known scholar and educator, with considerable experience in senior academic administrative and executive positions. An economist with strong interdisciplinary interests and a former President of the Council of Ontario Universities, he is currently the President and Vice-Chancellor of McMaster University.

Dr. Gail Beck has a psychiatry practice in Ottawa. She is currently Chair of the Women's Issues Committee, which deals with physician resources at the Ontario Medical Association.

Dr. John Bonn was appointed Registrar of the College of Physicians and Surgeons of Ontario in July 1997. Dr. Bonn brings to the Panel expertise in issues related to the licensure of physicians.

Dr. Ben Chan is currently senior scientist with the Institute for Clinical Evaluative Sciences (ICES). Dr. Chan has completed numerous analyses of the utilization of physician services in Ontario including a focus on physician practice patterns and differences in rural and urban physician practices. In addition to his research, Dr Chan provides monthly locum coverage for family physicians throughout Northern Ontario.

Dr. Laurel Dempsey is a family physician in the village of Verona, north of Kingston as part of the pilot project in Primary Care Reform. She maintains an active solo practice with 3000 rural patients.

Mr. Joseph de Mora is currently the President and Chief Executive Officer of Kingston General Hospital. When first appointed to the Expert Panel, he was President and Chief Executive Officer at the Sudbury Regional Hospital. That hospital has a large number of community based ambulatory programs and provides a wide range of special services in northern Ontario. It also provides training to a large number of health professionals, nursing students and medical doctors.

Dr. Brian Gamble has a full time family practice in Chatham as part of the Primary Care Network and is Chief of Staff at the Chatham Kent Health Alliance. Dr. Gamble has particular expertise in Primary Care Reform and the role of technology on physician human resources. He is Chair of the Section on General and Family Medicine of the Ontario Medical Association and also chair of the Practice Technology Committee of the OMA.

Sharon Goodwin is a primary health care nurse practitioner, nurse administrator and current Chair of the Nurse Practitioner Association of Ontario. She is also Director of Operations Clinidata/Direct Health Telephone Triage Service, responsible for the Direct Health 1-800 registered nurse advice service for Northern Ontario. She is a recognized leader in nursing with extensive experience, primarily in rural and northern communities.

Dr. Michael Howcroft is a Toronto ophthalmologist and former board member of the OMA. He has had a longstanding interest in physician resource planning and was previously a member of the Canadian Medical Association (CMA) committee on physician resource planning and chair of the OMA committee on Physician Resource Planning. Dr. Howcroft was also chair of the National Ad Hoc Working Group on Physician Resource Planning (a joint initiative of the CMA and provincial medical associations).

Mary Lapaine is a volunteer and businesswoman from Goderich. She is an active Board member of the Alexandra General and Marine Hospital and a Board member of the Ontario Hospital Association. Ms. Lapaine has been active in her own community and the province in addressing physician supply in rural areas.

Mr. Ronald Loucks is currently Vice President & General Manager for BCE Emergis Inc., Assure Health Division, the leading provider of e-Commerce Solutions in North America. Mr. Loucks is responsible for the corporate development and marketing of BCE Emergis, Assure Health, with insurance carriers, the consulting community, pharmacies, drug manufacturers, physicians and dentists.

Dr. William McCready has practiced as a nephrologist in Thunder Bay since 1982 and is Chair of the Northwestern Ontario Medical Program. He is also an associate clinical professor in the Department of Medicine at McMaster University.

Ms. Neera Mehta is currently an employment counselor with the Kitchener-Waterloo Multicultural Center. She is extensively involved in the development and delivery of training programs for internationally trained professionals and trades. Ms. Mehta is also the co-coordinator for the Kitchener-Waterloo International Physicians and Surgeons support group.

Dr. Linda-Lee O'Brien-Pallas, a registered nurse, is a professor at the Faculty of Nursing at the University of Toronto, with a cross appointment to the Department of Health Administration in the Faculty of Medicine. She has published widely in her areas of research, which include issues related to nursing health human resources. She was recently named as one of the first in Canada to hold a chair in health service and nursing research through a new program of the Canadian Health Services Research Foundation, in partnership with the Canadian Institute of Health Research. She is also Co-Principal Investigator of the Nursing Effectiveness Utilization and Outcomes Research Unit funded by the Ontario Ministry of Health and Long Term Care.

Dr. Jeffrey Remington is the Chair of the Niagara Physician Resource Planning Task Force. He has a family practice in Port Colborne and is Chief of Family Practice at the Port Colborne General Hospital site of the Niagara Health System. Dr. Remington has been involved in recruiting family doctors to Port Colborne.

Dr. Joshua Tepper is the immediate Past President of the Professional Association of Internes and Residents of Ontario (PAIRO). A recent graduate of the Rural Family Medicine Program at the University of Toronto, he is currently doing locums in Northwestern Ontario. He has participated in a wide range of activities related to the issues of rural and underserved communities including contributing to the PAIRO/Society of Rural Physicians of Canada (SRPC) "Blueprint" project. Nationally, he is the Chair of the Canadian Association of Internes and Residents (CAIR) Physician Resources Secretariat.

Dr. Peter Walker is Dean of the Faculty of Medicine at University of Ottawa and current Chair of the Council of Ontario Faculties of Medicine. Trained in internal medicine and endocrinology, he is Vice Chair of the Expert Panel.

Dr. Janice Willett is an obstetrician/gynecologist practicing in Sault Ste. Marie. She is affiliated with the Sault Area hospitals and is presently Chair of the Ontario Society of Obstetrics and Gynecology. Dr. Willett also has extensive experience with the Ontario Medical Association particularly in relation to northern and rural specialty care.

WORKING GROUP ON DATA AND MODELLING

Dr. Ben Chan, Chair
Senior Scientist, Institute for Clinical Evaluative Sciences

Dr. Linda Lee O'Brien-Pallas, RN, PhD, Vice-Chair
Co-principal Investigator, Nursing Effectiveness, Utilization and Outcomes Research Unit, University of Toronto

Dr. Stephen Birch, Professor
Department of Clinical Epidemiology and Biostatistics
McMaster University

Mr. Paul Brochu
Knowledge Management Unit, Health Planning Branch
Ontario Ministry of Health

Ms. Lynda Buske
Canadian Medical Association

Mr Neil Johnston
Ontario Physician Human Resources Data Centre (OPHRDC)

WORKING GROUP ON SUPPLY

Dr. Michael Howcroft, Chair
Ophthalmologist, St. Michael's Hospital

Dr. Gail Beck, Vice Chair
Psychiatrist, Ottawa

Dr. John Bonn, Registrar
College of Physicians and Surgeons of Ontario

Dr. Robert Byrick, Chair
Department of Anaesthesia, University of Toronto

Dr. Brian Gamble, Family Physician
Primary Care Network, Chatham, Ontario

Ms. Sharon Goodwin, RN (EC)
Director of Operations, Clinidata

Ms. Mary Lapaine
Board Member, Ontario Hospital Association

Ms. Neera Mehta
Employment Counsellor, Kitchener-Waterloo Multicultural Centre

Muhammad Rafiq, Chair
Association of International Physicians and Surgeons of Ontario

Dr. Murray Urowitz, Associate Dean
Postgraduate Education, Faculty of Medicine, University of Toronto

Dr. Peter Walker, Chair
Council of Ontario Faculties of Medicine

WORKING GROUP ON DISTRIBUTION

Dr. William McCready, Chair
Northwestern Ontario Medical Program

Mr. Joseph deMora, Vice-Chair.
President and CEO, Kingston General Hospital
(former CEO of Sudbury Regional Hospital)

Dr. Laurel Dempsey, Family Physician
Primary Care Network

Dr. Brian Gamble, Family Physician
Primary Care Network

Dr. Carol Herbert
Dean, Faculty of Medicine and Dentistry
University of Western Ontario

Dr. Peter Hutten-Czapski
Society of Rural Physicians of Canada (Ontario Region)

Ms. Mary Lapaine
Board Member, Ontario Hospital Association

Ms Eileen Mahood
Director - Northern (Sudbury) Region
Ministry of Health and Long-Term Care

Johanne Mousseau, RN (EC)
Assistant Professor, Faculty of Nursing, McMaster University

Dr. Jeff Remington
Niagara Physician Resource Planning Task Force

Dr. Joshua Tepper, Past President
Professional Association of Internes and Residents of Ontario

Dr. Janice Willett
Obstetrician/Gynaecologist

Appendix 2:

Submissions and Presentations to the Expert Panel

Brock University. Submission and letter on "Med Plus Program", B.G. Neuman, Associate VP, Student Services, September 2000

Canadian Medical Forum. Task Force on Physician Supply, Presentation by Dr. Nick Busing, Co-Chair, April 2000

Cancer Care Ontario. Systemic Therapy Task Force Report, April 2000

Cancer Care Ontario. Report on the Task Force on Human Resources for Radiation Services, February 1999, submitted to Panel in September 2000

Cardiac Care Network of Ontario. Final Report of the Consensus Panel on Cardiovascular Human Resources, June 2000

Chairs of Psychiatry in Ontario. letter re: psychiatric manpower in Ontario, submitted by Dr. R.P. Swinson, Morgan Firestone Chair and Professor, Psychiatry and Behavioural Neurosciences, McMaster University

Council of Ontario Faculties of Medicine (COFM). Business Plan for Rural Medicine, presented by Dr. Peter Walker

College of Physicians and Surgeons of Ontario (CPSO) and COFM. Proposal to Establish a New Route for Registering Physicians in Ontario, September 2000

Hutten-Czapski, Dr. Peter. Chair, Ontario Region, Society of Rural Physicians of Canada, Australian Incentive Plans – paper prepared for Expert Panel, Distribution Working Group, May 2000

Johnston, Mr. Neil. Ontario Physician Human Resources Data Centre, Potential uses of the OPHRDC physician database, presentation to the Panel, April, 2000

Joint Provincial Nursing Committee (nursing associations and educational organizations only). letter re: utilization of other health professionals, June 6, 2000

Lyanga, Dr. John. Submission to the Expert Panel of Long Term Supply of Doctors in Ontario, June 21, 2000

McElroy, Dr. Ross. Letter re: reflections on findings of physician fact finder, and HSRC primary health care strategy, February and April, 2000

McKendry, Dr. Robert. Findings of the Physician Fact Finder, presentation to the Expert Panel, April 2000

Neilson, Dr. Peter. Essex Provincial Progressive Conservative Riding Association, "Windsor Regional Medical School", October 3, 2000

Niagara District Health Council. Report of the Physician Resources Planning Task Force, June 2000

Northern Ontario Rural Medical School (NORMS) Liaison Council. "Northern Rural Medical School: Increasing rural medical graduates in Ontario", June 2000. Presentation to Panel, August 23, 2000

Negotiating Ontario's Well-Being (NOW) Alliance. "NOW Alliance Submission to the Expert Panel on Health Professional Human Resources", October 2000

Ontario College of Family Physicians. Where Have all the Family Doctors Gone? November 2000

Ontario Hospital Association. Position Paper on Physician Human Resources Policy and Planning (Working Draft), October 2000

Ontario Osteopathic Association (OOA). Brief of the OOA to the Expert Panel on Health Professional Human Resources, May 2000

Pediatric Oncology Group of Ontario (POGO). Submission of POGO: Health Professional Human Resources in Pediatric Oncology, September 2000

Professional Association of Internes and Residents of Ontario. Resident Placement Program, presentation by Dr. J. Tepper

Professional Association of Internes and Residents of Ontario. "Family Medicine": A proposed model for a limited licensure program for family medicine residents, June 2000

Regional Geriatric Program of Ontario. Survey of Geriatric Medicine Specialists, May 2000

Rourke, Dr. James. Educating Physicians for Rural/Regional/Northern Communities. Presentation to Expert Panel Working Group on Distribution, June 2000

Thames Valley District Health Council, Medical Human Resources Committee. Southwestern Ontario District Health Councils, Proposal to Increase the Supply of Licensed Physicians in Underserviced Areas of Ontario, April, 2000.

Toronto Department of Public Health. Letter from Dr. Sheela Basrur, Medical Officer of Health. December 6, 2000.

Watanabe, Dr. Mamoru. Data analysis to support findings of Physician Fact Finder, presentation to the Expert Panel, March, 2000

Windsor-Essex Medical School Exploratory Committee. Options Paper Implementing Recommendations to Accommodate Increased Enrollment of Medical School Students, June 2000. Presentation to Panel, August 2000.

Appendix 3:

Access Modelling for Health Care Services

The Expert Panel believes that the number, mix and distribution of physician services in Ontario should strive to be needs-based. However, Ontario does not yet have a reliable, consistent way to estimate or predict health needs. Traditional approaches have focussed on forecasting the supply of physicians, population growth, and future physician-population ratios. Such an approach implicitly assumes that needs are defined by population growth, a definition which is obviously too crude for precise planning.

In his report on the supply of physicians in Ontario, Dr. McKendry recommended piloting access modelling for "core services in medical fields where consumers appear to have ongoing problems getting timely care ... include[ing] family medicine." Access modelling is a method which considers the following:

- what is a reasonable level of access to health care services for patients that we should strive for?
- what is a reasonable workload for physicians/other health professionals who provide these services?
- how many physicians/other health professionals are needed to maintain this level of access over time, as the population grows and ages?

1. ACCESS TO CARE AND 'SENTINEL EVENTS'

The concept of "reasonable level of access to care" deserves some explanation. It is enormously difficult for researchers and policy-makers to define "true need" for health care services. To do so would require information about each patient's clinical condition and the ability to evaluate the appropriateness of every service rendered in the health care system. A more practical approach is to examine the aggregate level of utilization of a particular service and consider other evidence about the aggregate appropriateness of the service.

One approach is to develop a list of "sentinel events" or "services" for each specialty. These are key, high profile services which represent a significant proportion of workload within the specialty. Ideally, such events should also represent situations where the indication for the service is well-defined. If this condition holds, then utilization closely mirrors true need. An example of sentinel services which fit this condition are surgery for hip fractures, obstetrical deliveries and surgery for colon cancer.

The level of access for these sentinel services is defined as the rate of the service in the population (e.g., deliveries per capita per year), adjusted for changes in the age and sex composition of the population. Examination of trends over previous time periods may offer some insight over what a reasonable level of access might be in the future. Other corroborating information, such as data on trends in disease prevalence or changing indications for a service, may offer clues as to what the level of access should be in the future.

In practice, it is difficult to find sentinel events which meet all of these criteria. Hip and knee replacements are common orthopedic procedures of great benefit to patients who fit criteria for appropriateness. Because they are high profile services, they cannot be ignored. Yet, there is greater physician discretion in whether an operation should proceed, and evidence to suggest that inappropriate surgery takes place in Ontario.

In this case, we consider other factors which might indicate a "reasonable level of access." We know that:

- hip and knee replacement rates are rising linearly over the past 20 years in Ontario and other jurisdictions
- waiting times for hip and knee replacement are a common phenomenon in Canada
- Scandinavian jurisdictions have an age-sex adjusted hip and knee replacement rate 10 times higher than in Ontario
- within Ontario, areas where high hip and knee replacement rates are higher do not have a level of inappropriateness which is any different from areas with low rates
- many patients who meet the existing appropriateness criteria currently are not having the surgery done.

None of these facts provide solid evidence of true need. In the absence of perfect information, however, it would be reasonable to assume that hip and knee replacement rates continue to grow at their historical levels over the next few years.

2. WORKLOAD

Sentinel events can also be used to measure trends in workload over time. Workload is defined as the average number of sentinel events per physician. (Physicians who do not provide the sentinel event at all are excluded from the calculation.) An increase in workload may indicate any of the following:

- workload for physicians is increasing, and future increases in workload may not be sustainable or desirable. Indeed, the current workload may be too high and it may be desirable to decrease it in the future.
- physician productivity has risen, allowing physicians to comfortably perform more procedures.

The best interpretation of workload changes depends on corroborating information from other sources. Physician focus groups or surveys may provide insight on desired workload. The literature may offer insight into how techniques for performing a service have become more efficient, and what efficiency gains might be expected in the future.

3. ESTIMATING FUTURE PHYSICIAN REQUIREMENTS

Future physician requirements can be estimated from the following formula (simplified to its most basic form):

Sentinel events per capita x population = sentinel events per MD x MDs (1)

In other words:

$$\text{The expected \# of MDs (in year } i\text{)} = \frac{\text{sentinel event rate in year } i \times \text{population in year } i}{\text{workload in year } i} \quad (2)$$

a. Accounting for changes in the age/sex composition of the population

Ontario's population is not only growing but also aging. The proportion of the population aged 65 and over is growing 2.2% / year, compared to 1.0% for the under 65 age group. At the same time, the elderly use services much more frequently. To account for these trends, we revise the left side of equation (1) to the following:

$$\text{Total SE}_{\text{year } i} = \sum_{k=1}^{38} \text{SE per capita}_{\text{age/sex group k}} \times \text{population}_{\text{age-sex group k}}$$

Age groups are defined in five year blocks and there are 38 age/sex groups in total (male 0-4 years, female 0-4, male 5-9, female 5-9 up to male 90 and over, female 90 and over).

b. Accounting for multiple providers performing a sentinel event

In a number of situations, more than one type of provider can perform a sentinel event or service. For example, anesthesia can be provided by both anesthesiologists and GP-anesthesiologists. If we make an assumption of the ratio of anesthesiologists to GP-anesthesiologists, we can calculate the number of each provider type required. The assumed proportion in future time periods should consider what the proportion has been in the past as well as future technological trends and desired policy objectives.

Consider anesthesia, where the sentinel event is the number of anesthesia units billed:

T=total units

w_1= units per anesthesiologists

w_2 = units per GP anesthesiologists

z = ratio of anesthesiologists to GP anesthesiologists

x_1 = # of anesthesiologists

x_2 = # of GP anesthesiologists

$T = w_1 x_1 + w2\ x2$

$z = x_1 / x_2$

Therefore,

$x_1 = z\ x_2$

$T = w_1 z\ x_2 + w_2\ x_2$

$x_2 = T / (w_1 z + w_2)$

In some cases, we do not know the ratio, but we do know from other sources what the future supply and workload will be for one type of provider. For example, we know the rate of production of midwives at the present, and can assume this rate of production will continue. We then estimate, for future time periods, the number of unassisted obstetrical deliveries handled by midwives. The remainder (total estimated deliveries minus midwifery deliveries) will be performed by GP/FPs and obstetricians, and the number of these physicians is estimated using the above formula.

c. Accounting for non-fee-for-service physicians and providers within a specialty who do not perform a sentinel event

Most but not all fee-for-service physicians within a specialty will perform a sentinel event. For example, 71% of ophthalmologists performed cataract surgery in 1999/2000. Unless there is evidence to the contrary, we assume this ratio will remain constant over future time periods.

Similarly, there are many physicians who are remunerated primarily on a non-fee-for-service basis. Most are family physicians/general practitioners and a few are specialists. Access modelling examines only the activity of physicians within the fee-for-service sector (including those that submit shadow billings). For non-fee-for-service physicians, we assume that the projected growth rate for physician requirements is equal to the rate calculated for fee-for-service physicians.

There are some specialties where there is no comprehensive fee-for-service data at all. These include public health, community medicine, occupational medicine, pathology, and lab medicine specialties. For these specialties, we assume that the projected growth rate for physician requirements is equal to the average rate calculated for fee-for-service physicians in all specialties.

d. Accounting for multiple sentinel events for a specialty

In some instances, we have chosen more than one sentinel event per specialty. In the case of sentinel events which represent surgical procedures, different sentinel events are given a weight and added together. The weight is based on time needed to complete the procedure. The time is estimated from the time component of anesthesiology billings for the same procedure.

In cases where there is only one sentinel event in a specialty, we must take into account not only the growth in sentinel events, but also the proportion of workload the sentinel event accounts for in a typical physician's practice. For example, procedure X may be growing at 5% per year, but may only account for 10% of workload. If other services in the specialty are not growing, then the total increase in workload for the specialty is only 0.5%.

e. Special case - family / general practice

For primary care, the sentinel service is the number of patients in a physician's practice, adjusted for differences in the age and gender of patients. Such a measure was felt to be preferable to counting the number of office visits, because of the wide degree of variation among physicians in the frequency with which they ask their patients to return for follow-up visits. The method is as follows:

1. Assign any patient who receives at least 50% of his/her care from one physician to that physician's caseload. (Patients who met this criteria accounted for 75% of family physicians' office volumes.)

2. Calculate the average number of office visits for each patient age/sex category. Then, develop a weighting system for each age/sex category, equal to the number of office visits for the category divided by the average number of visits for the entire population.

3. The sentinel service is the number of weighted patients in a physician's practice. For each fee-for-service physician in Ontario, calculate the number of weighted patients in his/her practice. This is the workload measure of interest.

4. Project the future number of weighted patients who will see a fee-for-service family physician, based on projections of the growth and aging of the population. (Note that 59% of the population see a fee-for-service physician; the remainder either do not have a physician at all, or see a non-fee-for-service physician, or see so many different physicians in the course of a year that no single, dominant family physician can be identified. We assume that this proportion remains constant over time.)

5. Calculate the current workload/capacity of primary care contributed by GP-anesthesiologists, and FPs with an extra year of emergency medicine training, and GP/FPs who have neither of these qualifications.

6. Nurse practitioners (NPs) will contribute to primary care physician workload. Based on an extensive literature review and interviews with physicians and NPs, the Expert Panel determined that a physician working with a nurse practitioner can increase his/her patient load by 33% (with range of 25%-50%). Multiplying this proportion by the average GP/FP weighted patient workload gives the contribution to physician workload for each NP added to the system. The remainder (total weighted patients minus the contribution by NPs) is used to calculate the number of GP/FPs, GP-anesthesiologists and FP-emergency medicine physicians using the methods outlined in item b above.

4. PHYSICIAN SUPPLY MODELLING

The stock of physicians in Ontario, in any given year, depends on both the in-flow and out-flow of physicians into the system. In-flows may be from:

- physicians graduating from training programs
- physicians migrating from other provinces
- international medical graduates who accept a pre-arranged position in Ontario
- Canadian physicians returning to active practice from the USA and other international jurisdictions.

Out-flows may be from:

- retirement
- death
- migration to the USA and other jurisdictions
- migration to other provinces.

The Canadian Medical Association's Physician Resource Evaluation Template (PRET) tool estimates the supply of physicians in any given year. It examines recent levels of the above in-flows and out-flows and models different scenarios that would reflect either current or changing rates of gains and attrition.

The shortfall in physicians is simply the number of physicians required (as determined by access modelling) minus the supply of physicians (as determined by PRET).

RESULTS OF ACCESS MODELLING AND PRET ANALYSIS

1. SENTINEL EVENTS / SERVICES

We chose the following sentinel events / services:

Specialty	Sentinel Event / Service
GP/FPs	Number of patients in practice (weighted for age and sex)[40]
Orthopedics	Hip fractures Hip and knee replacements Open fractures Arthroscopies Consultations
Ophthalmologists	Cataracts Retinal Surgery Consultations
Psychiatrists	Consultations
Obstetrician / Gynecologists	Obstetrical Deliveries [41, 42] Consultations
General Surgeons	Colectomies Mastectomies / lumpectomies Cholecystectomies Inguinal herniorraphies
Anesthesiologists	Anesthesia units [2] Consultations
All other specialties	Consultations

40 *Nurse practitioners contribute to overall workload.*

41 *Can also be performed by GP/FPs.*

42 *Can also be performed by midwives.*

2. SENTINEL EVENT RATE - GENERAL TRENDS

- the consultation rate for all specialties dropped by 10% in 1998/99. This may have been the result of stricter OHIP criteria for a consult. The consultation rate was stable from 1995/96 to 1997/98, and from 1998/99 to 1999/2000, so it appears that the demand for consultations has remained relatively constant.
- the age/sex adjusted rate for sentinel services remained constant for anesthesiology units, but rose sharply for anesthesia consultations (8%/year). Adjusted sentinel event rates declined slightly for general surgery and obstetrics/gynecology (<1%/year), and increased for ophthalmology (>5%/year for cataract and retinal procedures) and for orthopedics (>1%/year for all procedures and >5%/year for knee replacements and >2.5% for hip replacements).

3. WORKLOAD - GENERAL TRENDS

- The average workload for all physicians, adjusted for the age and sex of the physician, has increased by just over 1% in the past five years.
- Physicians have been complaining that their workload has been increasing over time. Young physicians have indicated a preference for a more balanced lifestyle with more time for leisure and family activities.
- The physician workforce is growing older, and the proportion of physicians who are women is increasing. Both older physicians and females tend to have lower workloads. According to the PRET model, it is estimated that over the next 10 years, these two phenomena will lead to a 3% decline in average workload, all other factors remaining equal.
- The following sentinel events were characterized by rapid increases in workload: cataract surgery (10%/year), retinal surgery (8%/year), hip replacements (6%/year) and knee replacements (8%/year). These increases are influenced, in part, by productivity improvements.

4. PROVIDER MIX - GENERAL TRENDS

- The proportion of FP/GPs contributing to specialized care is dropping. The ratio of anesthesiologists to GP-anesthesiologists has been rising, from 77:23 in 1995/96 to 80:20 in 1999/2000. The ratio of obstetricians to GPs doing obstetrics has been rising from 26:74 in 1995/96 to 31:69 in 1999/2000. This trend has implications for smaller communities that do not have the volumes to support a specialist and rely on FP/GPs to provide these services.
- Approximately 40 midwives enter practice each year in Ontario. The typical caseload for each midwife is 40 deliveries per year. However, a significant proportion of deliveries (25% to 30%) involve shared care with an obstetrician/gynecologist.
- Approximately 100 nurse practitioners enter practice each year in Ontario. In the year 2000, 75% are expected to enter funded positions for primary care, and the remainder of positions are to be allocated for other practice settings. NPs can allow GP/FPs to increase their workload by 33% (with a reported range of 25% to 50%).

5. SUPPLY TRENDS

- Net physician migration to the US and other countries was at an historic high during the mid to late 1990s. The period from 1995 to 1999 was a turbulent time in physician-government relations. Because of acute fiscal pressures, the government instituted policies, such as clawbacks, restrictions on billing numbers and discounts for new graduates in selected urban areas.
- Retirement rates (age/sex adjusted) have been generally stable in Ontario, except for 1995 when there was a doubling of the usual rate. Again, this phenomenon may have been related to the factors cited above.
- Retirement rates have been generally lower in Ontario than in other provinces, which have instituted retirement buyout plans in recent years.
- The impact of the 10% national reduction in medical school enrolment in 1993 is being felt for the first time in fiscal year 1999-2000.
- Recent increases across the country in medical school enrolment. The 33 additional postgraduate positions added in response to the Fact Finder report and the interim increase of 40 positions this summer recommended by the Expert Panel are taken into account in the modelling.

SCENARIOS FOR MODELLING

We present the following three scenarios for consideration.

SCENARIO 1: STATUS QUO

The age/sex adjusted sentinel event rate, for all sentinel events, will remain the same. The increase in demand for services will be driven entirely by population growth and aging.

The physician workload (adjusted for physician age and sex) will remain the same. However, the overall physician workload (unadjusted for physician age and sex) will decline, due to aging of the physician pool and entry of more female physicians who take time off for family obligations.

Physician supply will reflect the past five-year trend (i.e., the historically high level of migration will continue, and the anomalous increase in retirement in 1995 will be included in the calculations).

The relative proportion of GP/FPs to specialists involved in anesthesiology and obstetrics will remain constant.

The health system will not make use of nurse practitioners.

Midwives will handle 28 deliveries per year, without assistance from obstetricians. The other 12 (30% of their total deliveries) will involve significant assistance from obstetricians, and will be counted as part of the obstetrics/gynecology workload.

SCENARIO 2: MOST PROBABLE SCENARIO

Age/sex adjusted demand for physician services will be stable in most specialties. There will be a slight growth in demand for anesthesia, orthopedics and ophthalmology (1%/year) to reflect growth in anesthesia consults, hip/knee replacements and cataract/retinal surgery.[43]

The workload per physician in all specialties except orthopedics and ophthalmology will gradually drop by 0.5%/year. The increasing number of women and older physicians accounts for a decline of 0.3%/year. The remaining 0.2%/year is designed to reflect the desire by both male and female physicians for more balanced lives.

The workload in orthopedics and opthalmology will increase slightly (i.e., 0.5%/year) to account for the impact of new technologies.

An effort will be made over the next 10 years to restore the ratio of internal medicine to subspecialist medicine that existed in 1995.

The relative proportion of GP/FPs to specialists will remain constant (i.e., 80:20 anesthesiologists to GP-anesthesiologists; 31:69 obstetricians to GPs doing obstetrics).

Over the next 10 years, about 75 nurse practitioners will be integrated into primary care each year, allowing those GPs working with nurse practitioners to increase patient load by 33%.

Midwives will continue to be introduced at the current rate and their workload will remain at the current level, as described in Scenario 1.

The total age/sex adjusted demand for general internal medicine and subspecialty medicine will remain constant. However, over the next 10 years, the ratio of internal medicine to subspecialist medicine should be restored to the level in 1995.

Physician supply will reflect the past five-year trend except for the following:

- with the improved fiscal climate, physician migration will decline to levels found in historical cycles
- the retirement rate calculation will exclude the anomalous year 1995.

43 *Note that the increase in demand does not equal the 6 to 10% increase in sentinel event rates, because these specialties provide other services that have not exhibited the same growth rate.*

SCENARIO 3: MOST PROBABLE SCENARIO WITH AGGRESSIVE POLICY INTERVENTIONS

Same as Scenario 2, except for the following:

Over the next ten years, the anesthesiologist to GP-anesthesiologist ratio, and obstetrician to GP/FP-doing-obstetrics ratio will be restored to 1995 levels. This will require significant incentives (financial, educational or other) to encourage GP/FPs to return to these domains of practice.

There will be a modest improvement in the number of midwifery deliveries not requiring shared care with an obstetrician (i.e., from 28/40 to 30/40). This will require concerted efforts to remove existing administrative and regulatory barriers to allow midwives to work at their full scope of practice.

The health care system will make maximum use of nurse practitioners, which will allow GPs working with NPs to increase their caseload by 50%.

The output from NP training programs will double from 100 to 200/year, beginning in year 2006. (We continue to assume that 75% will enter a collaborative group practice in primary care.)

The health care system will introduce a modest patient demand management program, which will allow family physicians to increase their caseload by 0.5%/year.

As the following charts indicate, the need for and shortfall in physicians over the next 10 years varies significantly depending on the scenario.

SCENARIO 1: STATUS QUO

TOTAL PHYSICIANS	2000	2002	2004	2006	2008	2010
Total Produced	20,418	20,472	20,563	20,679	20,848	21,049
Total Physicians Needed	20,692	21,421	22,153	22,882	23,635	24,406
Shortfall	(274)	(949)	(1,590)	(2,203)	(2,787)	(3,356)

GP/FPs	2000	2002	2004	2006	2008	2010
Total Produced	9,771	9,772	9,794	9,820	9,873	9,935
Total Physicians Needed	9,907	10,227	10,549	10,866	11,188	11,517
Shortfall	(136)	(455)	(755)	(1,046)	(1,315)	(1,582)

Anesthesiologists	2000	2002	2004	2006	2008	2010
Total Produced	877	900	919	942	961	981
Total Physicians Needed	892	926	961	996	1,034	1,074
Shortfall	(15)	(26)	(41)	(54)	(72)	(92)

General Surgeons	2000	2002	2004	2006	2008	2010
Total Produced	515	501	488	478	469	464
Total Physicians Needed	529	554	581	607	635	664
Shortfall	(14)	(53)	(92)	(130)	(166)	(200)

Obs/Gynecologists	2000	2002	2004	2006	2008	2010
Total Produced	656	641	633	624	615	608
Total Physicians Needed	657	660	663	669	677	687
Shortfall	(1)	(19)	(31)	(44)	(62)	(79)

Ophthalmologists	2000	2002	2004	2006	2008	2010
Total Produced	392	384	376	371	366	361
Total Physicians Needed	403	427	450	473	497	522
Shortfall	(11)	(43)	(74)	(102)	(131)	(160)

Orthopaedic Surgeons	2000	2002	2004	2006	2008	2010
Total Produced	367	369	369	367	365	363
Total Physicians Needed	378	398	418	439	461	483
Shortfall	(11)	(30)	(49)	(72)	(96)	(120)

Psychiatrists	2000	2002	2004	2006	2008	2010
Total Produced	1,715	1,722	1,724	1,723	1,719	1,712
Total Physicians Needed	1,777	1,842	1,902	1,960	2,012	2,064
Shortfall	(62)	(120)	(178)	(237)	(293)	(352)

SCENARIO II: MOST LIKELY SCENARIO, WITHOUT AGGRESSIVE POLICY INTERVENTIONS

TOTAL PHYSICIANS	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**
Total Produced	20,418	20,910	21,375	21,804	22,228	22,676
Total Physicians Needed	20,667	21,495	22,343	23,206	24,111	25,051
Shortfall	(249)	(585)	(968)	(1,402)	(1,883)	(2,374)

GP/FPs	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**
Total Produced	9,771	9,960	10,142	10,299	10,462	10,629
Total Physicians Needed	9,879	10,244	10,621	11,005	11,407	11,826
Shortfall	(108)	(284)	(479)	(706)	(944)	(1,197)

Anesthesiologists	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**
Total Produced	877	909	937	964	986	1,005
Total Physicians Needed	892	933	975	1,018	1,064	1,113
Shortfall	(15)	(24)	(38)	(54)	(78)	(108)

General Surgeons	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**
Total Produced	515	515	511	505	498	492
Total Physicians Needed	529	557	585	615	646	678
Shortfall	(14)	(42)	(75)	(110)	(147)	(185)

Obs/Gynecologists	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**
Total Produced	656	658	658	653	643	641
Total Physicians Needed	660	666	673	682	695	710
Shortfall	(4)	(8)	(15)	(29)	(51)	(69)
Ophthalmologists	2000	2002	2004	2006	2008	2010
Total Produced	392	391	388	387	385	379
Total Physicians Needed	403	429	454	478	504	530
Shortfall	(11)	(38)	(66)	(91)	(119)	(151)

Orthopaedic Surgeons	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**
Total Produced	367	371	374	375	374	376
Total Physicians Needed	378	400	422	444	467	491
Shortfall	(11)	(28)	(47)	(69)	(93)	(115)

Psychiatrists	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**
Total Produced	1,740	1,743	1,740	1,734	1,722	1,707
Total Physicians Needed	1,777	1,849	1,917	1,984	2,046	2,107
Shortfall	(37)	(106)	(177)	(249)	(324)	(400)

SCENARIO III: MOST LIKELY SCENARIO WITH AGGRESSIVE POLICY INTERVENTIONS

TOTAL PHYSICIANS	2000	2002	2004	2006	2008	2010
Total Produced	20,418	20,910	21,375	21,804	22,228	22,676
Total Physicians Needed	20,654	21,347	22,054	22,680	23,346	24,043
Shortfall	(236)	(437)	(678)	(876)	(1,118)	(1,367)

GP/FPs	2000	2002	2004	2006	2008	2010
Total Produced	9,771	9,960	10,142	10,299	10,462	10,629
Total Physicians Needed	9,865	10,104	10,350	10,511	10,687	10,878
Shortfall	(94)	(144)	(207)	(211)	(225)	(250)

Anesthesiologists	2000	2002	2004	2006	2008	2010
Total Produced	877	909	937	964	986	1,005
Total Physicians Needed	892	931	970	1,010	1,054	1,099
Shortfall	(15)	(22)	(33)	(46)	(68)	(94)

General Surgeons	2000	2002	2004	2006	2008	2010
Total Produced	515	515	511	505	498	492
Total Physicians Needed	529	557	585	615	646	678
Shortfall	(14)	(42)	(75)	(110)	(147)	(185)

Obs/Gynecologists	2000	2002	2004	2006	2008	2010
Total Produced	656	658	658	653	643	641
Total Physicians Needed	662	665	669	674	683	694
Shortfall	(6)	(7)	(10)	(21)	(40)	(53)

Ophthalmologists	2000	2002	2004	2006	2008	2010
Total Produced	392	391	388	387	385	379
Total Physicians Needed	403	429	454	478	504	530
Shortfall	(11)	(38)	(66)	(91)	(119)	(151)

Orthopaedic Surgeons	2000	2002	2004	2006	2008	2010
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Shortfall	(37)	(106)	(177)	(249)	(324)	(400)

LIMITATIONS OF ACCESS MODELLING

Access modelling has the following limitations:

1. NEED VS ACCESS

The concept of "reasonable level of access" strives to measure true need, but obviously falls short of this goal. The level of access suggested in the model is based on an examination of existing utilization trends, which may include both inappropriate utilization and underservicing of populations which could benefit from the service. Both these phenomena may be occuring at the same time.

2. ROBUSTNESS OF THE MODEL

Many of the variables which are inputs into the access modelling approach are subject to large random error, and are highly sensitive to external shocks to the health care system. Major clinical breakthroughs can suddenly make a procedure obsolete, shift the burden of care to a different specialty or result in major increases or decreases in workload. The impact of primary care reform remains to be seen: primary care reform could lead to a major role for nurse practitioners (which could decrease physician requirements), or could lead to more physicians being required to handle 24 hour on-call coverage. It is critically important, therefore, that each variable be measured on a yearly basis, and that the projections be updated yearly.

3. LIMITED NUMBER OF SPECIALTIES

Due to time constraints, the Expert Panel and its Working Group on Data and Modelling were only able to complete specialty-specific analyses on those specialties identified as having particularly urgent supply problems in Dr. McKendry's report.

4. DISTRIBUTIONAL AND CRITICAL MASS ISSUES

The model examined only aggregate supply and access for physicians in the entire province. It did not consider the specific needs of individual regions which have been relatively underserviced. Also, smaller regions may have issues related to critical mass: a smaller secondary centre, for example, may need more specialists of a particular type than what might be expected from examining provincial averages, in order to maintain a reasonable call schedule.

FUTURE ITERATIONS OF THE MODEL

It is recommended that:

a. The access model described here be updated on an annual basis

b. Future iterations of the model should include micromodelling for each specialty

c. The model be adapted to allow for planning at a local level. This would allow for the consideration of issues regarding physician distribution and critical mass.

CONCLUSION

Access modelling represents the first step in a new approach to measuring needs for physician services. Although far from perfect, it is a significant improvement over previous methods which examined only physician-population ratios and supply projections. Furthermore, it encourages policy-makers and the public to ask the question: "what is the level of service we should provide to the population, given its costs?", rather than simply asking the question," how many doctors do we need?" The former question strikes more directly at the issues of greatest importance to the public: access and affordability.

While the model has potential, its results at this stage in its development should be interpreted with caution. Planners must keep in mind that the model is capturing inappropriate service and underservicing, as well as appropriate levels of service. Perceived shortages in the supply of particular services may be due to factors others than the number of physicians, such as: lack of operating rooms, lack of support personnel, or inappropriate incentives that encourage physicians to devote a disproportionate amount of their time to providing non-sentinel services. If services were organized differently, the system might be able to increase its capacity to provide essential/sentinel services with existing resources or with only a modest increase in physician numbers. All these factors must be taken into account when using the model to help shape services to meet needs.

M121

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Appendix 4:

RECOMMENDATIONS OF THE PHYSICIAN FACT FINDER:
THE EXPERT PANEL CHECKLIST

Physicians for Ontario: Too Many? Too Few? For 2000 and Beyond.	Implemented by MOHLTC	Addressed in OMA Agreement	Rec #	Expert Panel – Final Recommendations
Measure and understand societal health care needs				
1. Ontario's health care system should develop Access Modelling pilots for core services in medical fields where consumers appear to have ongoing problems getting timely care. These disciplines include family medicine, anesthesiology, general surgery, obstetrics/gyneacology, psychiatry and orthopaedics.			13	HHRAP continue to develop and refine data models and planning tools to measure both health needs and capacity of the system to meet those needs.
Develop the capacity to plan for and manage a health workforce to meet societal health care needs				
2. The Ministry of Health and Long-Term Care should establish a permanent, independent Office of Health Workforce Policy and Planning to monitor and anticipate health care needs, and determine the most appropriate mix, supply and distribution of professional skills and services to meet those needs.			1	MOHLTC establish the Health Human Resources Advisory Panel, a permanent expert advisory body responsible for continually monitoring and anticipating the health needs of Ontarians and making recommendations on the appropriate supply, mix and distribution of health human resources to meet health needs. HHRAP to develop capacity for integrated health human resources planning, beginning with building capacity for physician services planning.
3. The Ministry of Health and Long-Term Care should ask Ontario Physician Human Resources Data Centre (OPHRDC) to develop, with input from the Institute for Clinical Evaluation Sciences (ICES), the ministry and the Ontario Medical Association (OMA) a uniform physician database.	✔ (Phase 1)		2	HHRAP with financial support of MOHLTC continue to refine and use the Ontario Physician Workforce Database as the basis for physician workforce planning and work with the other professions to develop comparable high quality workforce databases.
4. The Office of Health Workforce Planning and Policy should work with the Ministry of Health and Long-Term Care to develop a model for projecting and monitoring the effective supply of physician services in the province.	✔ (Phase 1)		13	See recommendation 13 above. In addition, HHRAP should: • Update Expert Panel's access model annually • Ensure that future iterations of the model include micromodelling for each specialty • Use the model to study and assess the need for resources to meet priority health needs • Adapt the model for use in planning at the regional and local level, ensuring that it considers physician distribution and critical mass • Continue efforts to develop a needs-based approach to determining population based health needs and provider requirements.

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Ensure an adequate supply of physician services to meet current and future health care needs				
5. The Ministry of Health and Long-Term Care should recruit/repatriate Canadian medical school graduates who have taken their postgraduate training in the United States and fund up to two years of postgraduate training in Ontario to enable these physicians to become eligible for the College of Family Physicians of Canada (CFPC) or Royal College of Physicians and Surgeons of Canada (RCPSC) certification.	✔			
6. The Ministry of Health and Long-Term Care should provide the necessary resources to allow the University of Toronto to increase the existing Ontario International Medical Graduates (IMGs) program from 24 to 36 positions, beginning in the year 2000.	✔			
7. The Ministry of Health and Long-Term Care should work closely with the medical schools and the Professional Association of Interns and Residents (PAIRO) to reduce the number of recently certified physicians who pursue their careers outside Ontario.			**22**	MOHLTC provide funding for three years to support the PAIRO Resident Placement Program. HHRAP should evaluate its impact on the supply, mix and distribution of physicians in Ontario, and make recommendations about ongoing long-term funding.
8. The Ministry of Health and Long-Term Care should develop a pilot recruiting campaign that targets expatriate Canadian trained physicians now practicing in the USA or other countries.				
9. Underserviced communities who are able to recruit International Medical Graduates (IMGs) should be aware and take advantage of the practice eligible route to certification offered by the College of Family Physicians of Canada (CFPC) and the Alternative Assessment and Evaluation program being pilot tested by the Royal College of Physicians and Surgeons of Canada (RCPSC).				See Recommendation 23. CPSO/COFM proposal to be consistent with RCPSC evaluation and assessment program for community-sponsored IMGs.
10. The College of Physicians and Surgeons of Ontario (CPSO) should consider providing time-limited special licenses for International Medical Graduates (IMGs) sponsored by underserviced communities who are currently practicing elsewhere in Canada and who are pursuing the College of Family Physicians of Canada (CFPC) practice eligible route to certification.				The Expert Panel considered this approach, but determined that a more appropriate route would be to enable IMGs to qualify for unrestricted licenses through the CPSO/COFM assessment, training and licensure proposal (rec.23).
11. The Ministry of Health and Long-Term Care should fund a limited number of postgraduate training positions for community-sponsored International Medical Graduates (IMGs) who do not qualify for the practice eligible route to licensure.			**23**	MOHLTC fund, on a four-year pilot basis, the COFM/CPSO proposal to license up to 25 fully qualified IMGs annually. Funding to be provided to screen potential candidates to undertake up to six-month assessment and up to 2 years of postgraduate training if necessary. Program to be limited to specialties and communities in short supply and HHRAP to evaluate impact of this program.

Physicians for Ontario: Too Many? Too Few? For 2000 and Beyond.	Implemented by MOHLTC	Addressed in OMA Agreement	Rec #	Expert Panel – Final Recommendations
Encourage more effective distribution of physician services across the province				
12. Ontario should increase undergraduate enrolment in the province's existing medical schools by approximately 10% (55 students) beginning in the year 2000 and allocate these positions to those schools that give priority to training rural physicians.	✔ (interim increase of 40 in Aug 2000)		**14**	MOHLTC, MTCU and AHSC increase undergraduate medical school enrolment by a total of 160 positions and allocate a minimum of 60 positions to northern/rural training and contract with sponsoring medical schools and clinical training centres to provide education.
13. Ontario should consider the advisability of creating a new medical school in rural medicine with a specific mission to attract students who are interested in working in the province's small, rural and remote communities.			**3-12**	Establish three clinical education centres in Windsor, Thunder Bay and Sudbury to educate and train undergraduate and postgraduate students, including the development of separate admissions process.
14. The Ministry of Health and Long-Term Care, in collaboration with other stakeholders, should assess the potential benefits of a new school for rural medicine compared to other rural medical training options and prepare a report on or before July 2000.			**3-12**	See above.
15. The Ministry of Health and Long-Term Care should make greater use of group practice recruitment incentives that have proven effective in the north (e.g., community-sponsored contracts) and offer similar programs (with suitable modifications) in communities in the south.			**29-30**	Establish a menu of incentives.
16. The Ministry of Health and Long-Term Care should work with local communities and physicians to develop a comprehensive retention program, that would include the following features: • Financial incentives for at least six years • Long service leave • Paid maternity leave • Information technology grants.	✔		**29-30**	Establish a menu of incentives. ***Note: Maternity leave included as part of OMA/MOHLTC agreement. Information technology funding provided through primary care networks.***
17. The Ministry of Health and Long-Term Care should make the following changes to the Underserviced Area Program (UAP) to increase its effectiveness: • Rename the Underserviced Area Program (UAP) the Appropriate Physician Services Supply Program. • Keep the current definition used to determine "underserviced" communities, but simplify and streamline the application and evaluation process, and reduce the time required • Hire three additional Community Development Officers.	✔			
18. The Appropriate Physician Services Supply Program (APSSP) should ensure that the physicians already practicing in underserviced communities are actively involved in all efforts to recruit and retain new physicians, including initiatives designed to repatriate Ontario physicians (see recommendation 8).				

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13. Ontario should consider the advisability of creating a new medical school in rural medicine with a specific mission to attract students who are interested in working in the province's small, rural and remote communities.			3-12	Establish three clinical education centres in Windsor, Thunder Bay and Sudbury to educate and train undergraduate and postgraduate students, including the development of separate admissions process.
14. The Ministry of Health and Long-Term Care, in collaboration with other stakeholders, should assess the potential benefits of a new school for rural medicine compared to other rural medical training options and prepare a report on or before July 2000.			3-12	See above.
15. The Ministry of Health and Long-Term Care should make greater use of group practice recruitment incentives that have proven effective in the north (e.g., community-sponsored contracts) and offer similar programs (with suitable modifications) in communities in the south.			29-30	Establish a menu of incentives.
16. The Ministry of Health and Long-Term Care should work with local communities and physicians to develop a comprehensive retention program, that would include the following features: • Financial incentives for at least six years • Long service leave • Paid maternity leave • Information technology grants.	✔		29-30	Establish a menu of incentives. ***Note: Maternity leave included as part of OMA/MOHLTC agreement. Information technology funding provided through primary care networks.***
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19. The Appropriate Physician Services Supply Program (APSSP) should provide realistic recruitment incentives that achieve the objectives.			29-30	Develop rurality index and menu of incentives.
20. The Appropriate Physician Services Supply Program (APSSP) should work with Group 1 and Group 2 communities (as defined by the 1993 OMA/Government agreement) to ensure they provide community clinic facilities suitable for group practice either by fee-for-service physicians or physicians on alternative funding plans.			29-30	Develop rurality index and menu of incentives.
Adjust the mix of physician services to meet current and future health care needs				
21. To provide more flexibility in the length and type of training available to physicians already working in rural and remote areas, the Ontario Medical Association (OMA) and the Ministry of Health and Long-Term Care should work with the province's academic health science centres to develop a competitive, short-term Continuing Medical Education (CME) Skills Acquisition Program.			29-30	Develop rurality index and menu of incentives Development of CECs and decentralized education resources and infrastructure will facilitate CME and skills acquisition for physicians working in rural and remote areas.
22. To improve the physician mix over the longer term and increase the number of family physicians with the skills to work in rural, remote areas, the Ministry of Health and Long-Term Care should provide the resources required to: • Increase the number of entry level residency positions in family medicine in Sudbury and Thunder Bay by 25% (6 positions) from 24 to 30 • Increase the number of family medicine PGY3 positions in obstetrics, emergency medicine, anesthesiology, care of the elderly and psychiatry in Sudbury and Thunder Bay from 4 to 10.	✔ ✔			
23. To develop a corps of physicians with the skills to provide some specialty services in rural/remote areas, the Ministry of Health and Long-Term Care should expand the re-entry/return of service program from 25 to 40 positions.	✔			
24. The Ministry of Health and Long-Term Care and the Ontario Medical Association should revise the existing re-entry training/return-of-service program to reduce barriers and attract more applicants.	*Note – program was reviewed MOHLTC Findings currently under consideration.			
25. The Office of Health Workforce Policy and Planning should monitor the mix of specialty physician services in Ontario to determine the right number and mix of postgraduate positions to meet provincial health care needs.			17	HHRAP, in consultation with COFM, take immediate steps to review and provide advice on the current and future mix of specialty training positions, giving particular attention to specialties in short supply or with distribution problems, priority health programs and public health.

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26. In the immediate short-term, the Ministry of Health and Long-Term Care should provide incentives that will increase the effective supply of emergency services, anesthesia, obstetrics, surgery and in-patient care in small, rural and remote communities.		✔		
27. The Ministry of Health and Long-Term Care, the Ontario Hospital Association (OHA) and the Ontario Medical Association (OMA) should develop a task force to review and refine the proposal from the Ontario Society of Rural Physicians (OSRP) (October 1999) for an affordable, fair incentive plan for physician services in rural and remote communities.			29-30	Rurality Index and menu of incentives.
28. The Ministry of Health and Long-Term Care should review existing discipline-specific workforce reports for those disciplines with the most acute shortages (e.g., anesthesiology, orthopedic surgery and psychiatry) to identify/implement the recommendations most likely to improve the mix of physician services.	✔			Reviewed and considered by Expert Panel (Access modelling). Future review to be undertaken by HHRAP.
Make effective use of other health care professionals to meet societal health needs				
29. Ontario should continue to explore effective ways to use nurse practitioners who have the training and scope of practice to work collaboratively with physicians and provide team care.			25	MOHLTC take steps to remove the barriers to collaborative physician/nurse practitioner primary care practice, and provide the funding to integrate a minimum of 75 nurse practitioners a year for the next five years into collaborative physician/NP practice, starting first in settings where collaboration has been successful.
30. To encourage more effective working relationships among physicians and nurse practitioners, the Ministry of Health and Long-Term Care and the Ontario Medical Association (OMA) should determine the most effective way to compensate physicians in a team care model (e.g., fee-for-service, blended payments, alternative payment plans).			25	See above.

Physicians for Ontario: Too Many? Too Few? For 2000 and Beyond.	Implemented by MOHLTC	Addressed in OMA Agreement	Rec #	Expert Panel – Final Recommendations
19. The Appropriate Physician Services Supply Program (APSSP) should provide realistic recruitment incentives that achieve the objectives.			29-30	Develop rurality index and menu of incentives.
20. The Appropriate Physician Services Supply Program (APSSP) should work with Group 1 and Group 2 communities (as defined by the 1993 OMA/Government agreement) to ensure they provide community clinic facilities suitable for group practice either by fee-for-service physicians or physicians on alternative funding plans.			29-30	Develop rurality index and menu of incentives.
Adjust the mix of physician services to meet current and future health care needs				
21. To provide more flexibility in the length and type of training available to physicians already working in rural and remote areas, the Ontario Medical Association (OMA) and the Ministry of Health and Long-Term Care should work with the province's academic health science centres to develop a competitive, short-term Continuing Medical Education (CME) Skills Acquisition Program.			29-30	Develop rurality index and menu of incentives Development of CECs and decentralized education resources and infrastructure will facilitate CME and skills acquisition for physicians working in rural and remote areas.
22. To improve the physician mix over the longer term and increase the number of family physicians with the skills to work in rural, remote areas, the Ministry of Health and Long-Term Care should provide the resources required to: • Increase the number of entry level residency positions in family medicine in Sudbury and Thunder Bay by 25% (6 positions) from 24 to 30 • Increase the number of family medicine PGY3 positions in obstetrics, emergency medicine, anesthesiology, care of the elderly and psychiatry in Sudbury and Thunder Bay from 4 to 10.	✔ ✔			
23. To develop a corps of physicians with the skills to provide some specialty services in rural/remote areas, the Ministry of Health and Long-Term Care should expand the re-entry/return of service program from 25 to 40 positions.	✔			
24. The Ministry of Health and Long-Term Care and the Ontario Medical Association should revise the existing re-entry training/return-of-service program to reduce barriers and attract more applicants.	*Note – program was reviewed MOHLTC Findings currently under consideration.			
25. The Office of Health Workforce Policy and Planning should monitor the mix of specialty physician services in Ontario to determine the right number and mix of postgraduate positions to meet provincial health care needs.			17	HHRAP, in consultation with COFM, take immediate steps to review and provide advice on the current and future mix of specialty training positions, giving particular attention to specialties in short supply or with distribution problems, priority health programs and public health.

Physicians for Ontario: Too Many? Too Few? For 2000 and Beyond.	Implemented by MOHLTC	Addressed in OMA Agreement	Rec #	Expert Panel – Final Recommendations
26. In the immediate short-term, the Ministry of Health and Long-Term Care should provide incentives that will increase the effective supply of emergency services, anesthesia, obstetrics, surgery and in-patient care in small, rural and remote communities.		✔		
27. The Ministry of Health and Long-Term Care, the Ontario Hospital Association (OHA) and the Ontario Medical Association (OMA) should develop a task force to review and refine the proposal from the Ontario Society of Rural Physicians (OSRP) (October 1999) for an affordable, fair incentive plan for physician services in rural and remote communities.			**29-30**	Rurality Index and menu of incentives.
28. The Ministry of Health and Long-Term Care should review existing discipline-specific workforce reports for those disciplines with the most acute shortages (e.g., anesthesiology, orthopedic surgery and psychiatry) to identify/implement the recommendations most likely to improve the mix of physician services.	✔			Reviewed and considered by Expert Panel (Access modelling). Future review to be undertaken by HHRAP.
Make effective use of other health care professionals to meet societal health needs				
29. Ontario should continue to explore effective ways to use nurse practitioners who have the training and scope of practice to work collaboratively with physicians and provide team care.			**25**	MOHLTC take steps to remove the barriers to collaborative physician/nurse practitioner primary care practice, and provide the funding to integrate a minimum of 75 nurse practitioners a year for the next five years into collaborative physician/NP practice, starting first in settings where collaboration has been successful.
30. To encourage more effective working relationships among physicians and nurse practitioners, the Ministry of Health and Long-Term Care and the Ontario Medical Association (OMA) should determine the most effective way to compensate physicians in a team care model (e.g., fee-for-service, blended payments, alternative payment plans).			**25**	See above.

Physicians for Ontario: Too Many? Too Few? For 2000 and Beyond.	Implemented by MOHLTC	Addressed in OMA Agreement	Rec #	Expert Panel – Final Recommendations
Make effective use of technology to meet health care needs				
31. Ontario should continue to invest infrastructure to support telemedicine applications which involve the use of co-ordinated electronic communications networks to transmit information and data and to provide appropriate clinical services.	✔ (Funding provided for pilot NORTH Network)		4	Ontario government in collaboration with federal government provide funding to support capital development of CECs, including investment for information technology infrastructure, broad band videoconferencing and telemedicine.
32. To support the provision of telemedicine services, the Ministry of Health and Long-Term Care should consider a number of options for appropriately compensating physicians for services delivered, including working with the Ontario Medical Association (OMA) to amend the current fee schedule.			30	Menu of incentives. Medium rurality – provided compensation to specialists for telephone advice/consults.
33. The Ministry of Health and Long-Term Care should consider extending tele-triage services to southern Ontario. A service similar to that being piloted in the north should be offered in the south.	✔ Expansion to south announced in Budget 2000			
34. Tele-triage services should be evaluated for their impact on access to care and on utilization of health services.	✔			

Physicians for Ontario: Too Many? Too Few? For 2000 and Beyond.	Implemented by MOHLTC	Addressed in OMA Agreement	Rec #	Expert Panel – Final Recommendations
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